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System Analysis Report

Human Factors Engineering System Analysis of CF18A Air to Ground Operations

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DCIEM CR 2001-072

The HFE Group Document Number 42-014-002 03/30/2001

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Abstract

The Directorate of Aerospace Requirements (**DAR 5**) is in the process of upgrading the CF-18A to maintain its technical currency over the next 20 years. Part of this upgrade will be the inclusion of a Helmet Mounted Display (**HMD**) with a Night Vision Imaging System (**NVIS**) capability.

The Defence and Civil Institute of Environmental Medicine (**DCIEM**) has undertaken an investigation of HMD and NVIS technologies in order to provide DAR with advice on human factors issues that may arise from their use in the CF-18A. The investigation will focus on the Air to Ground role of the CF-18A as this is the most likely role in North Atlantic Treaty Organization (**NATO**) and coalition activities. The Air to Ground role of the CF-18A also presents a high cognitive demand on the skills and abilities of the pilot.

This report is the second of two Human Factors Engineering (**HFE**) reports prepared for DCIEM in support of DAR 5. The first report is a Mission Analysis Report of CF18 Air to Ground Operations and should be read in conjunction with this report. This report provides the detailed results of an HFE study of the employment of the CF-18A in an operational Air to Ground environment. The analysis was conducted without the inclusion of the HMD in order to provide a baseline for assessing the future impact of HMD and NVIS procurements on the modernized fighter.

This report includes a Goal Decomposition, Goal Allocation, Operation Sequence Diagrams, Critical Goal Analysis and a Perceptual Control Theory (**PCT**) based Information Flow and Processing Analysis. The results of the HFE Analysis will be used to assess the impact of HMD and NVG technologies and the flow of information in the cockpit of the Modernized CF-18A.

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Executive Summary

This report is the second of two Human Factors Engineering (HFE) reports prepared for the Defence and Civil Institute of Environmental Medicine in support of the Directorate of Aerospace Requirements (**DAR 5**) of the Department of National Defence (**DND**). The objective of the Human Factors Engineering System Analysis of CF-18A HMD was to establish a baseline of information that could be used to assess the impact of HMD and NVIS technologies on the flow of information in the cockpit of the Modernized CF-18A.

This report documents the findings of the HFE Analysis of the CF-18A in an Air to Ground Role in accordance with the Statement Of Work (**SOW**), Public Works and Government Services Canada (**PWGSC**) Solicitation No. W7711-007675/A.

The analysis follows the general principles and guidelines for HFE as described in MIL-HDBK-46855 "Human Engineering Program Process and Procedures". Specifically, this report addresses the objectives of the SOW to develop a detailed description of the information flow and processing based on a defined CF-18A equipment suite and the employment of the CF-18A in an operational Air to Ground environment. Unlike traditional mission, function and task analyses conducted by DCIEM in the past, this project is based on Perceptual Control Theory (**PCT**) and uses the concept of goals in place of traditional tasks. It also bases the information flow and processing analysis on the individual PCT based data for each goal unlike a traditional information flow and processing analysis conducted on an entire mission segment.

For the purposes of this study, the assumed air vehicle will be the post CF-18A modernization aircraft configuration, avionics sub-systems, weapons systems and Defensive Electronic Warfare Suite (**DEWS**). The assumed air vehicle will incorporate the CF-18A Incremental Modernization Program and Capital Program initiatives described in the Mission Analysis Report, The HFE Group Document # 42-014-001. Although the CF-18A HMD will be an integral part of the CF-18A modernization, for the purpose of establishing an initial reference database, it was not included as part of the assumed air vehicle.

The System Analysis Report includes a goal decomposition, goal allocation analysis, critical goal analysis, operational sequence diagrams and a PCT based information flow and processing analysis. As the intent of this project was to establish a baseline for future work, there are no design recommendations or detailed findings of the suitability of the proposed mission kit.

As a separate task, the results of the system analysis were entered into the Integrated Performance Modelling Environment (**IPME**) to support future modelling activities. The task networks were populated and the initial IP/PCT data was entered. In order to produce useable results from the IPME model, an additional modelling effort would be required. This additional effort was scheduled as an optional work package to be exercised at a later time.

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Acknowledgements

This System Analysis Report expands upon an initial study conducted by BAE SYSTEMS CANADA INC. (BSC) and makes maximum reuse of much of the methodology contained within the CF188 APG-65 Radar Human Factors Engineering Study Reports published between May 2000 and December 2000 (Contract Serial Number W7714-9-0281). To avoid unnecessary repetition of methodology descriptions, the reader is referred to the corresponding BSC document containing the detailed description.

The Microsoft Access Database used to facilitate data entry and produce the required reports was provided to The HFE Group by DCIEM as Government Furnished Information (**GFI**). The database was originally developed by Mr. Mike Wellwood under sub-contract to BSC and has been used successfully on many Human Factors projects. The database provided was highly modified to meet the project specific needs of this analysis and has been delivered back to DCIEM for use on future projects.

Introduction

General

The Directorate of Aerospace Requirements (**DAR 5**) is in the process of upgrading the CF-18A to maintain its technical currency over the next 20 years. Part of this upgrade will be the inclusion of a Helmet Mounted Display (**HMD**) with a Night Vision Image System (**NVIS**) capability.

As the use of HMD and NVIS technologies in the CF-18A represent new ways of performing old tasks, it was determined essential to establish how this technology would be used and to document the flow of information in the cockpit.

The Defence and Civil Institute of Environmental Medicine (**DCIEM**) has undertaken an investigation of HMD and NVIS technologies in order to provide DAR with advice on human factors issues that may arise from their use in the CF-18A. The investigation will focus on the Air to Ground role of the CF-18A as this is the most likely role in North Atlantic Treaty Organization (**NATO**) and coalition activities. The Air to Ground role of the CF-18A also presents a high cognitive demand on the skills and abilities of the pilot.

The purpose of the Human Factors Engineering (**HFE**) Analysis of the CF-18A HMD is to provide an initial human factors analysis of the CF-18A in an operational Air to Ground role. This information is presented in two parts: a Mission Analysis Report and a System Analysis Report. When combined these two reports establish a baseline of information that can be used to assess the implications of employing HMD and NVIS technologies in the CF-18A.

The results of the Mission Analysis Report included a description of the assumed air vehicle, a Composite Mission Scenario and identified potential Measures of Effectiveness.

For the purposes of this study, the assumed air vehicle was the post CF-18A modernization aircraft configuration, avionics sub-systems, weapons systems and Defensive Electronic Warfare Suite (**DEWS**). The assumed air vehicle incorporated the CF-18A Incremental Modernization Program (**IMP**) and Capital Program initiatives described in the Mission Analysis Report. Although the CF-18A HMD will be an integral part of the CF-18A modernization, for the purpose of establishing an initial reference database, it was not included as part of the assumed air vehicle.

The results of the HFE Analysis will establish a baseline of information that can be used to assess the impact of HMD and NVIS technologies and their impact on the flow of information in the cockpit of the Modernized CF-18A.

As a separate task, the results of the HFE Analysis were entered into IPME to support future modelling activities.

Purpose

The purpose of this System Analysis Report is to communicate the findings of a Human Factors Engineering Analysis of the CF-18A in an operational Air to Ground role. The results of the HFE Analysis were used to populate a baseline Integrated Performance Modeling Environment (**IPME**) model that can subsequently be used to support future modelling activities and the assessment of the impact of HMD and NVG technologies on the Modernized CF-18A.

This System Analysis Report includes: a functional/goal decomposition, a goal allocation analysis, a critical goal analysis, operational sequence diagrams (OSD's), and a Perceptual Control Theory (**PCT**) based information flow and processing analysis.

Objectives

In order to achieve the purpose described above, the following objectives were identified:

- a. Conduct a functional goal decomposition;
- b. Produce function flow diagrams (FFDs);
- c. Conduct a goal analysis;
- d. Conduct a goal criticality analysis;
- e. Produce operational sequence diagrams (OSDs);
- c. Conduct a PCT based information flow and processing analysis;
- d. Build goal networks of the critical mission segments within IPME; and
- e. Populate the IP/PCT data for each goal within IPME.

Scope

The System Analysis Report may be read as a standalone analysis of the employment of the CF-18A in an operational Air to Ground role but is better understood when put into context and reviewed after reading the Mission Analysis Report.

When combined with the Mission Analysis Report, the System Analysis Report provides the Project Manager with a baseline of information that can be used to support future modelling activities.

The results of the HFE Analysis will establish a baseline of information that can be used to assess the impact of HMD and NVIS technologies and their impact on the flow of information in the cockpit of the Modernized CF-18A.

Report Organization

The report is organized into seven sections as follows:

- a. Section One Introduction. Section One provides background information, the purpose and objectives of the analysis, and the scope and organization of the report.
- b. Section Two Functional/Goal Decomposition.
- c. Section Three Goal Allocation Analysis
- d. Section Four Operational Sequence Diagrams
- e. Section Five Critical Goal Analysis

- f. Section Six Information Flow and Processing Analysis
- g. Section Seven References. Section Seven documents a listing of references used in producing this report.
- Annex A Glossary of Terms and Acronyms.
- Annex B Function Flow Diagrams
- Annex C Goal Inventory
- Annex D Goal Allocation Criteria and Weights
- Annex E Goal Allocation
- Annex F Goal Inventory with Completion Times
- Annex G Goal Criticality
- Annex H Operational Sequence Diagrams
- Annex I PCT Goal Analysis Results

Functional Goal Decomposition

The HFE Group based the analysis on the top-level functions identified in the CF188 APG-65 Radar Human Factors Engineering Study, Mission Analysis Report [Reference 1]. As the focus of this project was to analyze the CF18 in the Air to Ground role, only function number seven identified in the following Function Flow Diagram (FFD) was decomposed.

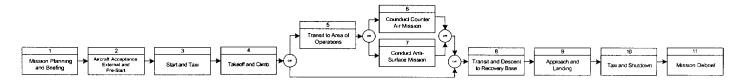


Figure 1 CF18 Top Level Functions

Function seven, 'Conduct Anti-Surface Mission' was decomposed down an additional two levels and FFDs were generated to support each level. The FFDs generated as a result of this analysis are included as Annex B to this document.

The Human Factors (**HF**) Analyst and Subject Matter Experts (**SMEs**) conducted a thorough review of the FFDs to ensure the diagrams effectively represented an actual CF-18 air to ground mission. During the generation of the FFDs, the team tried to remain consistent with the work previously conducted under the CF188 APG-65 Radar Human Factors Engineering Study, Mission Analysis Report [Reference 1]. There was however, one exception with the modelling of function 7.7, React to Threats. This function was presented in each second level FFD within the BSC analysis. For the purposes of this contract it was determined that 'React to Threats' should be identified as a separate first level function.

During the initial development of the FFDs, all of the CF18 primary air to ground missions were identified on the first level FFD. This created an extremely large diagram that would have added significant complexity to the subsequent analysis. After a detailed cognitive walkthrough of each mission type with the SMEs, it was determined that the missions could be logically grouped into first level functions that would capture the activities of each detailed mission type. It is important to note that although the first level FFD does not name the mission type specifically, the functions performed for all air to ground missions are contained within one of these higher level functions.

Figure 2 represents the initial first level functions identified versus the final first level functions that were selected.

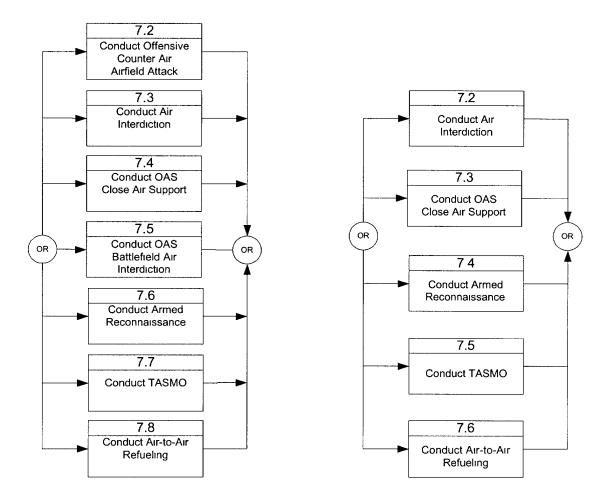


Figure 2 Initial First Level Functions vs. Final First Level Functions

Upon completion, the decomposition of the top and first level goals (functions) were submitted to the Scientific Authority (SA) and Technical Authority (TA) for review. This early review enabled the SA and TA to track the work as it was completed and encouraged feedback that was incorporated into the diagrams at an early stage thus preventing the potential for re-work due to misunderstandings or a lack of communication.

Following the review of the top and first level goals, the goals were further decomposed down to the fourth level. Although this analysis did not require all lowest level goals to exist at the fourth level, consistency with traditional Mission Function and Task Analysis (**MFTA**) techniques was utilized to ensure ease of data import/export and numbering and to provide a common framework for the analysis. The Access Database that was used to populate the data at the first and second levels was also used for entering the detailed data down to the fourth level.

Because time was very limited on this project (40 working days), only the information required to populate the Operational Sequence Diagrams (**OSD**s) was generated at this step in the analysis. The information gathered consisted of Goal Number, Goal Label, Goal Description, and a Goal Completion Time (an average time only with no distribution). This was enough

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information to conduct a Critical Goal Analysis and encouraged a concentrated effort that focused on the population of critical mission segment data.

The SMEs used Microsoft Access 2000 for data entry and storage. The database was developed from a Microsoft Access 97 database provided to The HFE Group as Government Furnished Information (**GFI**). The database enhanced the SMEs ability to distribute the work (including offsite distribution) allowing each SME to work on a replica of the original database. Each replica was then subsequently synchronized to the master database at regular intervals throughout the project.

At the fourth level, source goals were used to minimize repetition within the database. Because each high level function contained a sub-function, the fourth level goal would be 'mapped' to the first occurrence of the same goal within the database. For example, goal number 7.2.3.1(c) Conduct Formation Join Up has a source goal number of 7.1.1.3(c). This indicated that Conduct Formation Join Up occurred in section 7.2 Conduct Air Interdiction and in section 7.1 Conduct Tactical Rendezvous. Since the goal is the same in both sections, only the first occurrence of the goal is populated with data. All subsequent goals from other sections were then mapped to this source goal. In total, there were 908 individual fourth level goals identified. All 908 goals can be mapped to 268 source goals.

A complete inventory of goals is presented as Annex C to this document.

Goal Allocation Analysis

Following the completion of the goal decomposition down to the fourth level, a goal allocation analysis was conducted. The method used to conduct this analysis was in accordance with MIL-HDBK-46855A. This methodology is commonly employed and has been used for numerous Air Force HF projects in previous years for DCIEM and DTA. For a detailed description of the methodology, please refer to the CF188 APG-65 Radar Human Factors Engineering Study, Function and Task Analysis Report [Reference 2].

The Microsoft Access Database contained an environment for conducting function allocation that was optimized for this project. To save time and effort, the existing default weighting factors identified in the CF188 APG-65 Radar Human Factors Engineering Study, Function and Task Analysis Report were used. These weighting factors have been used on previous projects and were verified for applicability to the CF-18 project [Reference 2].

The following table identifies the criteria used for conducting the goal allocation and their associated weights:

CRITERIA	WEIGHT
Boredom	0 012
Complexity	0.051
Computation	0.031
Concept of Operations	0.084
Data Measurement	0.035
Data Sensing	0.057
Dexterity	0.029
Info Availabılıty	0 055
Input Sensitivity	0.061
Intelligence	0.053
Memory	0.055
Mobility	0.011
Pattern Recognition	0.074
Power	0.013
Problem Solving	0.057
Reasoning	0.066
Reliability	0 051
Response Time	0.047

Table 1 Goal Allocation Criteria and Weights

CRITERIA	WEIGHT
Situation Awareness	0.059
Technical Risk/Cost	0.027
Verbal Task	0.073

Before commencing work on the goal allocation, it was first necessary to provide the SMEs who had conducted the previous work under the supervision of the HF Analyst, with a definition of each of the criteria. It was essential that all the SMEs fully understood each of the criteria before populating the data. The following verbal anchors were used to determine whether the goal was best performed by the human or the machine.

1. Problem Solving

Machine: This task requires only a single, well-defined approach for optimal problem solution.

Human: This task requires the selection and use of multiple methods, trial and error, improvisation, and/or knowledge acquired in the course of the mission for optimal problem solution.

2. Computation

Machine: This task requires complex or repetitive calculations to be performed with precision.

Human: This task requires only estimations or generalizations to be made and precision is not essential.

3. Complexity

Machine: This task requires simultaneous multiple-channel data input and/or output (e.g. receive/process visual and aural information simultaneously).

4. Computation

Machine: This task requires complex or repetitive calculations to be performed with precision.

Human: This task requires estimations or generalizations to be made and precision is not essential.

5. Concept of Operations

Machine: N/A

Human: The current concept of operations requires that a human perform this task because of the safety, moral, ethical or policy aspects of the task.

6. Data Measurement

Machine: This task requires the measurement of signals (e.g. temperature, contamination level, radar range) in absolute and precise terms.

Human: This task requires the determination or generalization of relative signal levels or on-off states, rather than precise and absolute measurement.

7. Data Sensing

Machine: This task requires the detection of signals that are outside the range of human perception, such as Infra-Red (IR).

Human: N/A

8. Dexterity

Machine: N/A

Human: This task requires great dexterity and/or versatile and adaptive manipulation of objects.

9. Information Availability

Machine: N/A

Human: Some or all of the information required to complete this task cannot be provided through a data bus (i.e. electronically).

10. Input Sensitivity Machine: N/A

Human: This task requires the detection of low absolute-value signals, and/or detection of signals through overlapping noise.

11. Intelligence Machine: N/A

Human: This task requires the detection and reporting of low-probability events or information incidental to the primary task.

12. Memory

Machine: This task requires high-capacity and high-precision short and long-term memory with very short access time.

Human: This task requires multiple-access memory of concepts, principles and learned relationships.

13. Mobility Machine: N/A Human: This task requires mobility within the workspace environment.

14. Pattern Recognition

Machine: N/A

Human: This task requires the detection of variable and/or subtle patterns and trends.

15. Power

Machine: This task requires the consistent application of large, constant forces.

Human: N/A

16. Problem Solving

Machine: This task requires only a single, well-defined approach for optimal problem solution.

Human: This task requires the selection and use of multiple methods, trial and error, improvisation, and/or knowledge acquired in the course of the mission for optimal problem solution.

17. Reasoning

Machine: N/A

Human: This task requires inductive reasoning using incomplete information.

Reliability

Machine: This task requires a consistent level of performance over a long period.

Human: N/A

18. Response Time

Machine: This task requires very fast response times.

Human: N/A

19. Situation Awareness Machine: N/A

Human: The performance of this task by a human operator contributes to that operator's maintenance of situational awareness.

20. Technical Risk or Cost Machine: N/A

Human: A machine of the required capability or complexity would be very large, costly and/or would require more power than is economically feasible.

21. Verbal Task Machine: N/A

Human: This task requires sending or receiving context-sensitive information expressed in verbal communication.

The SME used the Access Database to assign a value between -1,0 and 1 to each goal depending on whether the goal was better suited to the man (1) or machine (-1) for each criterion. A value of 2 (mandatory man) or -2 (mandatory machine) was entered for goals that were mandatory allocated to the 'man' or the 'machine' based upon doctrine or standard operating procedures.

The MS Access program was then used to calculate the values assigned to each goal allocation and a report was generated. All marginal allocations (those with a value between -0.065 and 0.065 representing no preference towards man or machine) were then revisited and overridden to 'man' or 'machine' by the HF analyst as required.

Out of the original 265 unique goals that were identified by the SMEs and HF Analysts, 79 goals were identified as being candidates for performance by the machine. There were also 38 marginal allocations that were re-visited by the analyst that resulted in 19 re-allocations.

Typically once a machine goal is identified, an additional human goal must be created to provide the monitoring function of this machine goal. This would have resulted in an additional 79 goals being created as a monitoring function of the machine goals. To reduce the time and effort associated with the completion of this task, it was determined that the machine goals as identified in the goal allocation would be re-written to describe the human function associated with monitoring the machine. All goals that were re-written to describe the human monitoring function have been clearly identified in the rationale column of Annex E Goal Allocation.

Operational Sequence Diagrams

General

Operational Sequence Diagrams of the Air-to-Ground segment of the Composite Mission Scenario were developed in accordance with MIL-HDBK-46855A. To facilitate greater flexibility in the creation of the OSDs, The HFE Group used Microsoft Visio 2000 to generate these diagrams. This application provided a graphical user interface that allowed the user to drag-and-drop elements onto the diagram and provided a **WYSIWYG** (what you see 1s what you get) interface such that the OSD was developed graphically rather than through a word processing text script. Visio allowed the entire OSD drawing to be displayed and printed on a plotter (28 x 41 sheets of paper) allowing the reader to easily follow along the timeline without interruption. This provided an excellent means of presenting the diagrams for SME reviews and minimized the confusion associated with hundreds of loose sheets of paper. MS Visio was flexible enough to allow for the integration of additional information to be displayed (such as the interaction with system components) and allowed an appropriate mapping with the corresponding mission scenario.

The significant advantage of developing the OSDs was to provide a basis for visualizing the detailed goal data against a timeline in order to determine where high workload or information processing problems may occur. The OSD's graphically depict the composite mission scenario against a timeline and enable the HF Analyst to identify the critical mission segments within the scenario that will require further analysis. They have proven to be particularly useful when analysing highly complex systems that require time critical information involving multiple users.

Symbology

OSDs make use of symbology to indicate actions, decisions, transmission of information and timing requirements that permit the HF Analyst to analyse the flow of information and operator tasks as they occur in relation to the mission timeline.

The symbology used in the OSDs followed the conventions as described in MIL-HDBK-46855 [Reference 8]. The following sub-paragraphs provide a brief summary of the symbology used in developing the operational sequence diagrams for the CF-18A Air to Ground role. If there was a requirement to deviate from MIL-HDBK-46855, an explanation is offered:

- a. Task. A task symbol was represented by a circle and indicates an action, function or process is being performed.
- b. Continuous Tasks. A continuous task symbol was used to indicate an ongoing (continuous) task that in most cases starts at the beginning of a segment or at the completion of another task. Continuous tasks are indicated by a circle (task symbol) with a vertical arrow that points downward from the centre of the symbol. Continuous tasks continue until they are interrupted.

- c. Repeated Tasks. Tasks that are performed repeatedly are presented by a circle (a task symbol) with a hook that extends from the centre of the symbol. These tasks continue to repeat unless they are interrupted.
- d. Transmit. When information was transmitted it was displayed as either a oneway communication or a two-way communication through the use of ARROWS. A double arrow indicated a participative method of communication (all parties participating) otherwise a single arrow was used to indicate a one-way communication. The direction of the arrow indicated the intended direction of the message.
- e. Receipt. Whether one-way or two-way, a transmit arrow must have a receipt symbol. This half circle is the intended receiver of the message. There may or may not be a response to the message being received.
- f. Task Interrupt and Resume Tasks. Due to the inherent time constraints of the project, it was determined that the OSDs would not include task interrupts and resume tasks as a general rule. However, on occasion the Subject Matter Expert felt it was necessary to identify a task interrupt that had a significant impact on the tasks being performed. As the information from the OSDs was used to populate the IPME models, this information can be entered directly into IPME as part of any follow on work.
- g. Time Intervals. Time is displayed along the left hand side of the page in the column marked Time. Each task description is followed by a task completion time to assist the reader with the flow of events. Continuous tasks have been assigned a completion time of 999 for ease of recognition.

The following figure describes the symbols used in the development of the OSDs for the CF18A air to ground analysis.

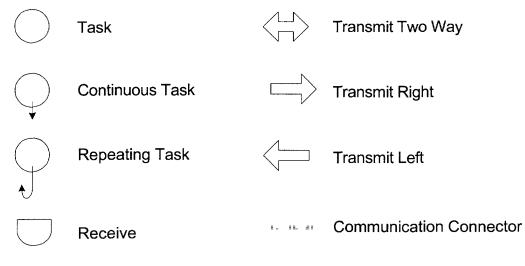


Figure 3 OSD Symbols

Each task contains the following additional information: Task ID, Task Description, and Completion Time. This information was used to assist the Analyst with the identification of each task, to improve readability and to assist with the identification of Critical Tasks within each critical mission segment. This task information appears to the right and centre of each task except for transmit or receipt tasks when this information may appear under the dotted lines connecting the transmit/receipt symbols.

- a. Task ID. The Task ID is a number [i.e. 7.7.5.2(b)] that corresponds to the Task ID in the MS Access 2000 Database. This database was modified and expanded upon to meet the requirements of this project.
- b. Task Description. The task description is a brief narrative of the task being performed.
- c. Task Completion Time. The task completion time is presented after the task description and represents the estimated time it would take to complete the task being performed. Please note that the task completion times do not take into account any variance. They are simply an estimate of the time it would take to complete the task as assigned by the Subject Matter Experts employed on this project. Continuous tasks have a completion time of 999 to indicate to the reader that they are continuous tasks.
- d. Repeating Task Times. When a task is repeating, the repeat interval is provided.

Development of Operational Sequence Diagrams

The HFE Group generated four operational sequence diagrams to support the corresponding composite mission scenario as described in the Mission Analysis Report. The OSDs were used to provide a graphical representation of the tasks being performed against the mission segment timeline.

The four OSDs developed are listed as follows:

- a. Mission Segment 7.1 Conduct Air Interdiction RV
- b. Mission Segment 7.2 Conduct Air Interdiction
- c. Mission Segment 7.2 Conduct Night BAI
- d. Mission Segment 7.3 Conduct OAS/CAS

From within these four OSD's, six critical mission segments were identified and annotated with a blue box and mission segment title. These mission critical segments were identified as a result of conducting a critical goal analysis and are described in detail in the next section of this report. Upon completing the Critical Goal Analysis, the critical mission segments of the OSDs required further analysis. The results of this analysis are presented in an information flow and processing analysis, Section Six of this report and attached as Annex I, PCT Goal Analysis. It is the detailed results of the PCT based information flow and processing analysis that was used to populate the IPME models.

The Operational Sequence Diagrams are attached to this report as Annex H.

Critical Goal Analysis

A Critical Goal Analysis was conducted for each of the unique goals as identified in the MS Access 2000 database. The analysis was conducted in accordance with the techniques employed by DCIEM and DTA on other Air Force HF projects. For a complete description of the techniques used, please refer to the SOLE Methodology Documentation [Reference 6]. Each unique goal was given a number between 0 and 10 for each of the five criteria related to Goal Criticality. The criteria used in this analysis are described below:

- 1. **Safety**. A value from 1 to 10 is assigned according to the degree to which the noncompletion, or incorrect completion, of a given task would adversely affect the safety of relevant personnel.
- 2. **Mission**. A value from 1 to 10 is assigned according to the degree to which the noncompletion, or incorrect completion, of a given task would jeopardize or limit the successful completion of the mission.
- 3. Efficiency. A value from 1 to 10 is assigned according to the degree to which the non-completion, or incorrect completion, of a given task would reduce human efficiency by requiring corrective action by one or more individuals who would not normally have been involved.
- 4. **Reliability**. A value from 1 to 10 is assigned according to the degree that noncompletion, or incorrect completion, of a task would adversely affect the long- or short-term reliability of the system. This included situations that would decrease the mean time between failures, result in the requirement for maintenance action, or render the system unserviceable for the remainder of the mission.
- 5. **Cost**. A value from 1 to 10 is assigned according to the degree to which the noncompletion, or incorrect completion, of a given task would result in increased monetary cost.

Each unique goal was given a Goal Criticality Rating (TCR) between 1 and 10 (10 indicating the goal was absolutely critical to the successful completion of the mission). Each Goal was then assessed to determine if the demands of the goal approached the limits of human performance and to determine if conducting 'further analysis' of the goal would likely result in improvement. The final value assigned to each unique goal was an Adjusted Goal Criticality Rating (ATCR). The ATCR range was between 1 and 10 (10 being the most critical).

While populating the data for the ATCR, the team encountered some difficulty in addressing the 'further analysis' criteria. The 'further analysis' criteria is based upon an assumption by the HFE Analyst that 'further analysis' of the goal would likely result in improvement. After considering previous projects when this analysis may have been an important consideration, it was determined that there was not enough information available to address this criteria for this project and it was therefore assigned a value of 0. Due to this lack of information, there were no adjustments made to the TCR for this criteria.

To maintain consistency with naming conventions previously employed on other HF projects, the term TCR or Task Criticality Rating was used to describe the Goal Criticality Rating. The same applies for the ATCR or Adjusted Task Criticality Rating; ATCR was used to describe the Adjusted Goal Criticality Rating. The Microsoft Access database provided as GFI for this project was used to calculate the TCR and ATCR. When the database was initially developed it was designed with this functionality.

All goals with an assigned ATCR value of 8, 9 and 10 were deemed to be Critical Goals. These critical goals required further analysis to assist the HF Analyst with the identification of critical mission segments.

The OSDs were once again used and proved to be a valuable tool in determining the location of the critical goals within the mission. The OSDs were updated to include colour codes for each of the Critical Goals identified as a result of the Critical Goal Analysis. A critical goal with an assigned ATCR of 8 was also assigned a colour code of blue, a goal with an ATCR of 9 was assigned a colour code of yellow, and any goal with an ATCR of 10 (and considered to be the most critical) was assigned a colour code of red. This colour coding created a visual display that would allow the HF Analyst to visually identify the concentration of Critical Goals as they occurred in the mission. These concentrations of critical goals (often the largest concentration of red within the OSDs) were then identified and labelled as critical mission segment. Each critical mission segment was then assigned a title and is explained in greater detail in the next section of this report, Information Flow and Processing.

Information Flow and Processing Analysis

A review of the four operational sequence diagrams easily identified six critical mission segments. Each critical mission segment was annotated with an enclosed blue box and clearly labelled with a name and segment number. The following is a list of each of the Critical Mission Segments and the Critical Mission Segment Number:

 Critical Mission Segment #1 – Evade Air Threat During Low Level Ingress (SU-27)

Part of OSD #2, Section 7.2, Conduct Air Interdiction

2. Critical Mission Segment #2 – General Purpose Bomb Attack (Daytime)

Part of OSD #2, Section 7.2, Conduct Air Interdiction

3. Critical Mission Segment #3 – Evade Threat (SA-8) During Medium Level Ingress (Night)

Part of OSD #3, Section 7.2, Conduct Night BAI

4. Critical Mission Segment #4 – GPS Guided Bomb Attack (Night)

Part of OSD #3, Section 7.2, Conduct Night BAI

5. Critical Mission Segment #5 – Self-Lasing Guided Bomb Attack (Night)

Part of OSD #4, Section 7.3, Conduct Night OAS/CAS

6. Critical Mission Segment #6 – Maverick Air to Ground Missile Attack (Night)

Part of OSD #4, Section 7.3, Conduct Night OAS/CAS

The database was updated to indicate the goals contained within the critical mission segments as well as all the continuous and repeating goals from the top of each OSD that were active during the mission segment. There were 130 unique goals identified that fit these criteria. Of these goals, many were repeated throughout the Critical Mission Segment therefore the actual number of goals within all the segments was much higher. Each of these goals was then populated with the Information Processing (IP) and Perceptual Control Theory (PCT) data required for modelling within the IPME application. The Microsoft Access Database provided as GFI for this project was used to populate the IP/PCT data. A detailed description of the methodology is contained within the Perceptual Control Theory Approach to Human Systems Analysis Summary Report prepared for DCIEM by BAE Systems Canada [Reference 3]. A detailed description of the IPME Version 1.10 Reference Manual, Chapter 13, Information Processing Model [Reference 4].

The following Goal-Level IP Model Parameters were generated for all goals as required for the IP/IPME modelling environment:

IP Components:

- a. **IP No.**—Modeled within IPME only. The IP No. represented within the database is a mapping number to indicate the Goal that the IPME task maps to within the Microsoft Access Database;
- b. **Operator**—All the operators in this analysis were pilots. The goals as described in the Microsoft Access Database are independent of the individual aircraft being flown. Within IPME, the goals were duplicated and an assignment to the Lead Aircraft, Number 2, Number 3 or Number 4 Aircraft was made.
- c. Goal Label —a narrative description of the goal.
- d. **Goal Completion Time**—the mean time to complete the task or accomplish the goal/objective. No time distribution was used on this project, only the mean time.
- e. Auditory Category—an assignment of the auditory nature of the task/goal/objective for use in identifying task interference within the IP/IPME performance prediction analysis environment;
- f. Externally Cued?—a yes/no/not applicable indication of external task cueing;
- g. **Cognitive Category**—an assignment of the cognitive nature of the task/goal/objective for use in identifying task interference within the IP/IPME performance prediction analysis environment;

IP Scheduling:

- a. Scheduling and Priority Category—an assignment of the priority (and related parameters including allowable delay and degree of difficulty) of the task/goal/objective in accordance with the IPME Version 1.10 Reference manual p.13-16 [Reference 4];
- b. Allowable Delay the allowable delay (K) value which defines the allowable delay as a multiplier of the mean goal time;
- c. **Degree of Difficulty-** used for continuous goals where the degree of difficulty (D) is defined as a percentage of the total goal time where the goal is being attended;
- d. Interruptable?—a yes/no indication of whether or not the task can be interrupted;
- e. **Resumable**?—a yes/no indication of whether the task can be resumed after having been interrupted (without additional workload);
- f. Sheddable?—a yes/no indication of whether or not the tasks can be shed; and
- g. Shed if Late?—a yes/no indication of whether the task is to be shed rather than starting late.

An Information Flow and Processing Analysis was conducted on the selected Critical Mission Segments. This is not a traditional Information Flow and Processing Analysis that would be used to analyze the Critical Mission Segments as a whole but rather an analysis that identifies all the PCT data required for each goal within each Mission Segment. This analysis is based upon the methodology and data entry fields used in the Perceptual Control Theory Approach to Human Systems Analysis Summary Report prepared for DCIEM by BAE Systems Canada [Reference 3]. The key difference between a traditional Information Flow and Processing Analysis and the PCT based analysis is that the PCT analysis looks at each goal separately rather

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than looking at the Critical Mission Segment as a whole. This gives a fine degree of resolution for the analysis but does not provide the 'big picture' of how information flows through the segment. A traditional Information Flow and Processing Analysis also looks at other criteria such as consequences of error and impact on situational awareness.

The following data was generated for all goals as required for the PCT analysis:

- a. **Data Common to IP/IPME**—various data common to both the IP/IPME and the PCT analysis including IP No., goal/objective, task description, operator assignment, and link to the corresponding Access Database No., if different;
- b. **Initiating Conditions**—a narrative description of the conditions that would cause the goal to be attended (i.e. the goal has not been achieved, error (e) .0);
- c. **Initiating Action**—a narrative description of the actions to be taken in attending to the goal;
- d. Ending Conditions—a narrative description of the conditions that would cause attendance of the goal to be terminated (i.e. the goal has been achieved, e=0);
- e. Ending Actions—a narrative description of the actions to be taken when the goal has been achieved;
- f. **Knowledge**—narrative descriptions of declarative and situation knowledge requirements for attending to the goal;
- g. **Output/Behaviour**—an assignment of the human behaviours, and related cognitive/perceptual process categories, for goal attendance;
- h. **Input/Sensation**—an assignment of the input sensations, and related cognitive/perceptual process categories, for assessing goal achievement;
- i. **Influenced Variables (External**)—a listing of the external variables within the control loop that the operator affects while attending to the goal (external variables are observable by a third party);
- j. **Output Interface**—a listing of the interfaces the operator uses to interact with the external world;
- k. **Influenced Variables (Internal**)—a description of the operator's perception as to whether the goal has been achieved or not (internal variables are not observable by a third party);
- 1. **Output Interface**—a listing of the interfaces which influence the operator's perception as to whether or not the goal has been achieved; and
- m. **Feedback to higher-level goals**?—a yes/no indication of whether the achievement of the goal influences one or more higher level goals.

The completed database and the OSDs were used by Micro Analysis and Design to build the network model within IPME. One of the aims of this contract was to provide a populated network model within the IPME application in order to facilitate further research on the CF18 in the air to ground role. As the focus was exclusively on data population, no effort was made to model all the interdependencies required to create a fully functional model. Because the model is not fully functional, there was no opportunity to perform any analysis of the data or to verify the data integrity with IPME. This activity has been identified as an optional work package that would be exercised at a later time.

Conclusion

A complete Mission, Function and Goal Analysis was conducted and a populated data model was developed within IPME. The project was completed under an extremely aggressive schedule of just 40 working days. The ability to re-use much of the information provided by DCIEM to The HFE Group team along with a very focussed methodology allowed the project to be completed on time. Because of the time restriction imposed on the program, the analysis does not cover the wide scope of a traditional Mission, Function and Task Analysis nor does the documentation provide an exhaustive description of methodology. What the project does provide, is an in depth analysis of the most critical mission segments with a solid base of data within IPME to continue future work.

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Annex A

Glossary

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Glossary

24/7	24 hours a day, 7 days a week
AAR	Air-to-Air Refuelling
AC	Alternating Current
ACDVS	Aircrew Chemical Defence Ventilator System
ACM	Air Combat Manoeuvring
ACM	Airspace Control Measures
AGL	Above Ground Level
ALSE	Advanced Life Support Equipment
AMIRS	Advanced Multi-Role Infrared Sensor
AMLCD	Active Matrix Liquid Crystal Display
AMRAAM	Advanced Medium Range Air-to-Air Missile
AOB/GOB/EOB	Air, Ground and Electronic Orders of Battles
AST	Air-to-Surface Tactics
AWACS	Airborne Warning and Control System
BCA	Border Crossing Authority
BDA	Bomb Damage Assessment
BST	Boresight Mode
CAMAO	Combined Allied Military Air Operation
CF	Canadian Forces
CFIT	Controlled Flight Into Terrain
CONOPS	CONcept of OPerationS
CR	Combat Ready
D/L	Data Link
DAR	Directorate of Air Requirements
DC	Direct Current
DCS	Digital Communication System
DDIs	Digital Display Indicators
DEWS	Defensive Electronic Warfare Suite
DFFG	Deep Fathom Fishing Grounds
DND	Department of National Defence
ECCM	Electronic Counter Counter Measures

ECS	Environmental Control System
EGI	Embedded Global Positioning/Inertial Navigation System
EGR	Embedded GPS Receiver
ELE	Estimated Life Expectancy
F/A	Fighter Attack
FAOR	Fighter Area of Operational Responsibility
FLIR	Forward Looking InfraRed
FPTD	Fighter Pilot Training Directive
FSU	Former Soviet Union
GP	General Purpose
GPWS	Ground Proximity Warning System
HFE	Human Factors Engineering
HMD	Helmet Mounted Display
HOBS	High Off Boresight System
HOTAS	Hands-On-Throttle-And-Stick
HSD	Horizontal Situation Display
HUD	Heads-Up Display
HVAA	High Value Airborne Asset
IAD	Integrated Air Defence (IAD) System and SAM: SA-6, SA-7, SA-8, SA-11, SA-13, SA-14 and SA-16
IFR	Instrument Flight Rules
IMP	Incremental Modernization Project
INS	Inertial Navigation System
IR	InfraRed
JDAM	Joint Direct Attack Munition
JSOW	Joint Stand Off Weapon
LGB	Laser Guided Bombs
LST	Laser Spot Tracker
MCs	Mission Computers
MDG	Multi-purpose Display Group
MDLS	Mission Data Loading System
MFFOs	Mixed Fighter Force Operations
MIDS	Multi-functional Information Distribution System
MILSATCOM	Military Satellite Communications

MOEs	Measures of Effectiveness
MRI	Multiple, Release, and Interval
MSI	Multi-Sensor Integration
NATO	North Atlantic Treaty Organization
NCTR	Non-Cooperative Target Recognition
nm	Nautical miles
NORAD	North American Air Defence
NVGs	Night Vision Goggles
NVIS	Night Vision Imaging Systems
OAS	Offensive Air Support
OEM	Original Equipment Manufacturer
OFP	Operational Flight Program
OPFOR	OPposing FORces
OSDs	Operational Sequence Diagrams
PC	Personal Computer
PGMs	Precision Guided Munitions
PPS	Precise Positioning Service
psi	pounds per square inch
PSKE	Pilot Skill and Knowledge Element
PSKL	Pilot Skill and Knowledge Level
PTLL	Pilot Tactical Leadership Level
PWGSC	Public Works and Government Services Canada
RAF	Royal Air Force
RNLAF	Royal Netherlands Air Force
ROE	Rules Of Engagement
RV	RendezVous
RWR	Radar Warning Receiver
RWS	Range While Search
SAM	Surface-to-Air Missile
SAR	Semi Active Radar
SLOC	Sea Lines Of Communication
SMS	Stores Management Set
SOW	Statement Of Work
SPS	Standard Positioning Service

SRAAM	Short Range Air-to-Air Missile
STT	Single Target Track
SVs	space vehicles
TAOC	Tactical Air Operations Centre
TCCCS	Tactical Command, Control and Communication System
TRP	Tactical Rendezvous Point
TWS	Track While Scan
UFC	Up-Front Controller
UN	United Nations
USMC	United States Marine Corps
USN	United States Navy
VACQ	Vertical Acquisition Modes
VS	Velocity Search
WACQ	Wide Acquisition
WYSIWYG	What You See Is What You Get
XEFZ	Xarian Economic and Fishing Zone
YFR	Yearly Flying Rate

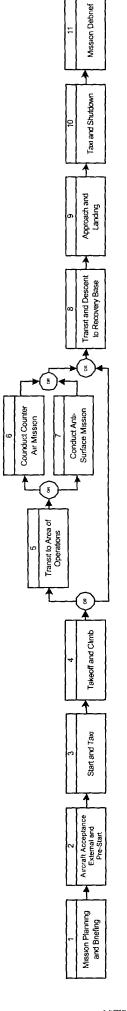
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Annex B

Function Flow Diagrams

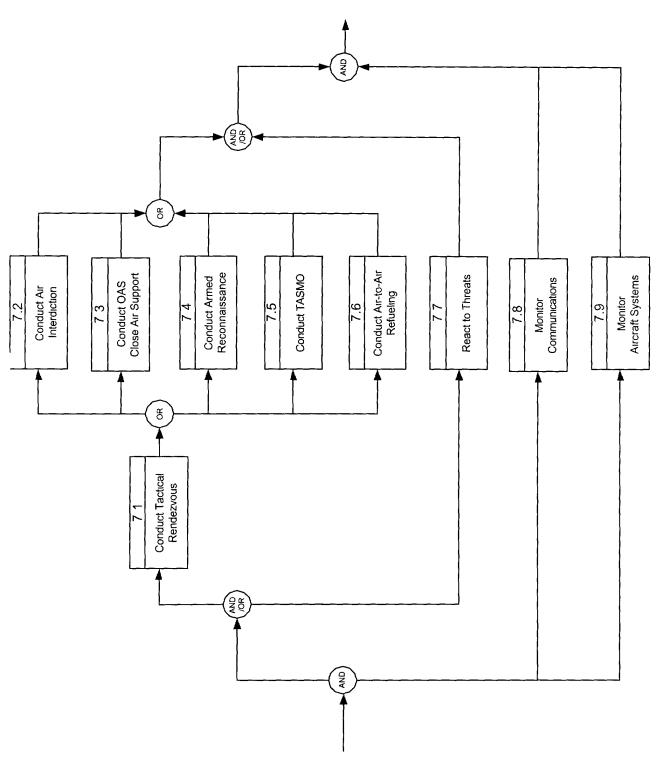
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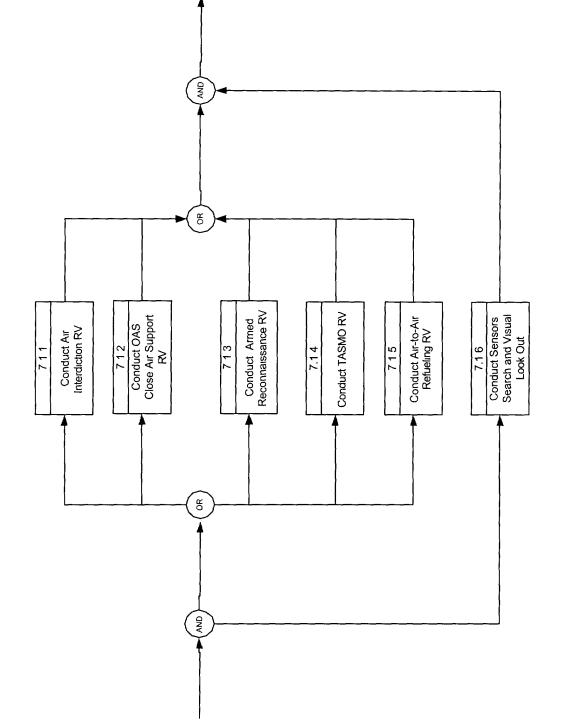


CF188 Top Level

Section 7 Conduct Anti-Surface Mission

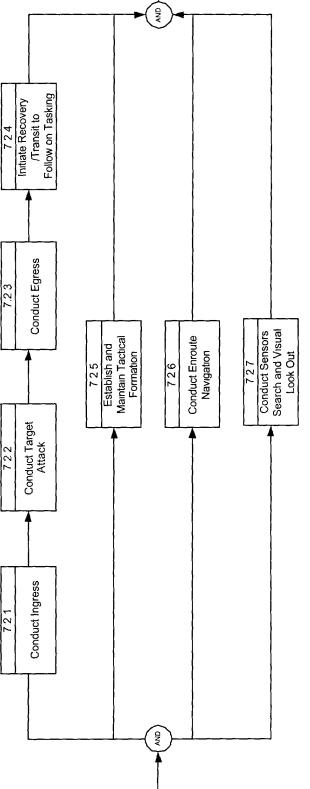


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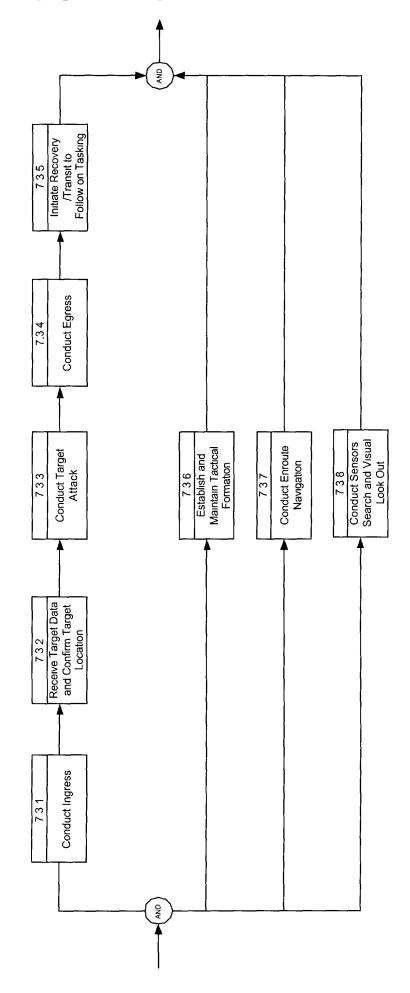


Segment 7.1 Conduct Tactical Rendezvous

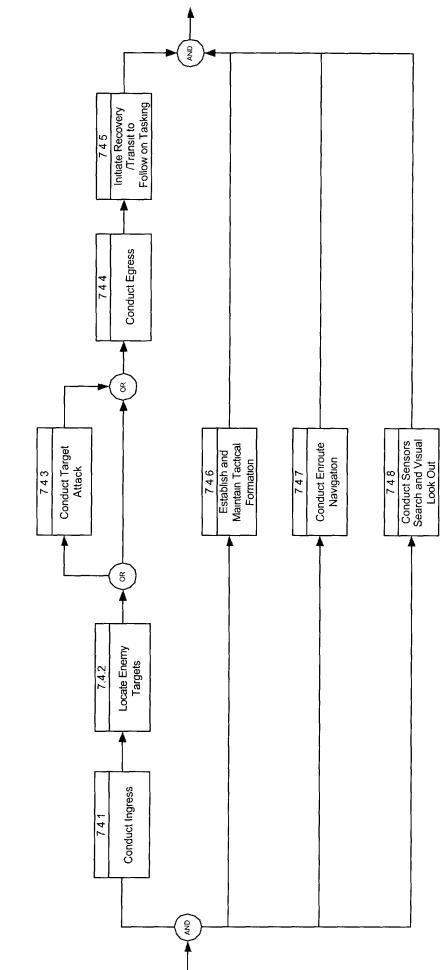
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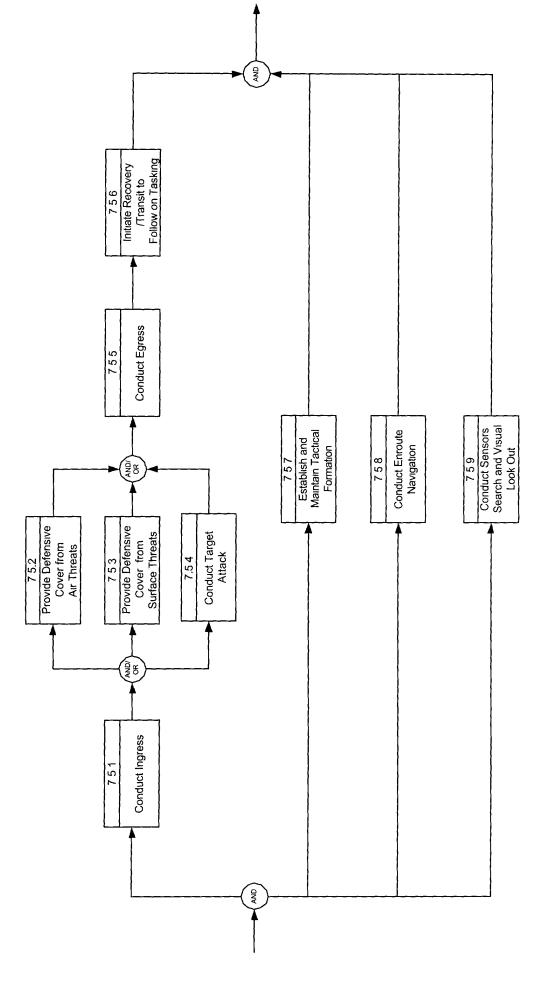
Segment 7.2 Conduct Air Interdiction





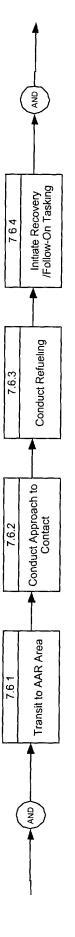




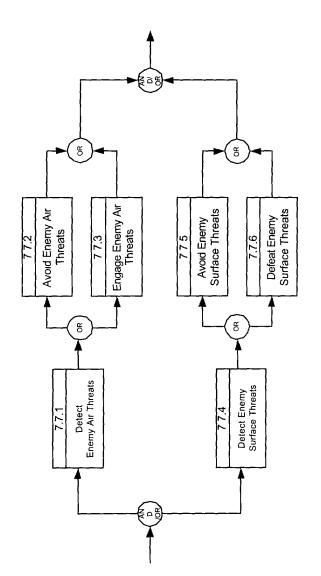




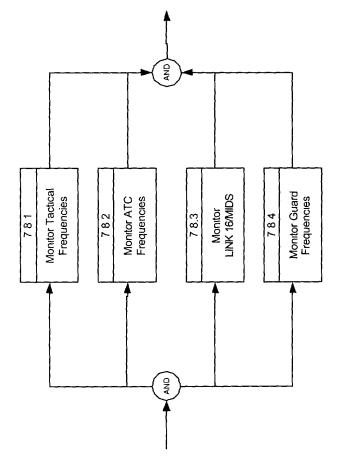




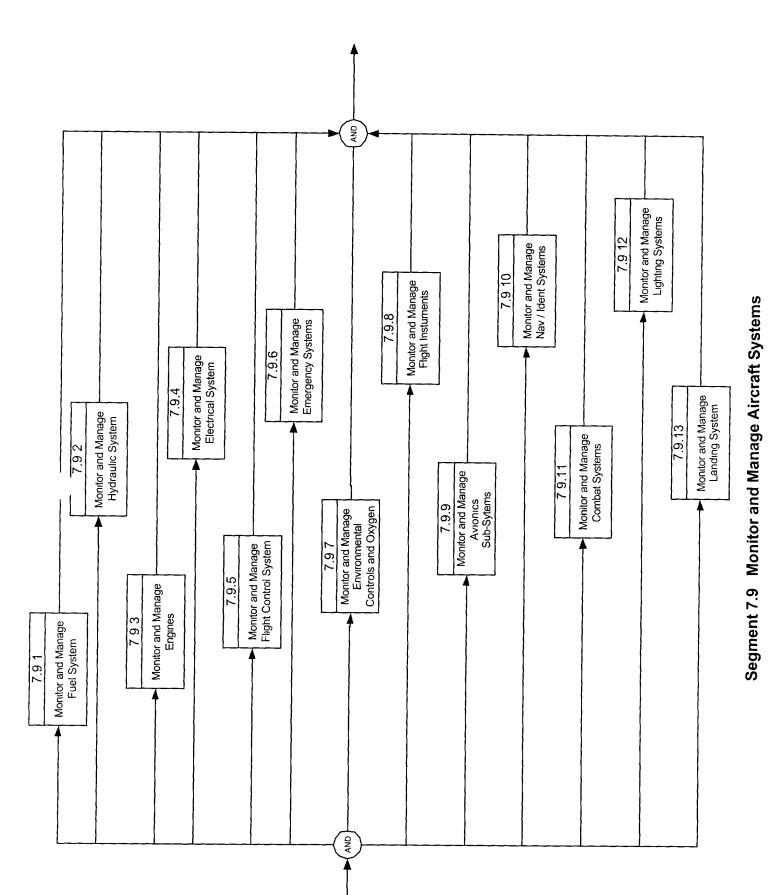
Segment 7.6 Conduct Air-to-Air Refueling



7.7 React to Threats



Segment 7.8 Monitor Communications



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Annex C

Goal Inventory

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7	Con	nduct Anti-Surfa	nce Mission
7.1	Conduct Tactical Rendezvous		
7.1.1	Conduct Air Interdiction RV		
7.1.1.1	Esta	ablish Hold at T	RP
	7.1.1.1(a)	7.1.1.1(a)	Identify TRP
	7.1.1.1(b)	7.1.1.1(b)	Conduct TRP Hold
	7.1 1 1(c)	7.1.1.1(c)	Search for TRP
7.1.1.2		ablish Contact	
	7.1.1.2(a)	7.1.1.2(a)	Establish Radar Contact with Other Mission Elements
	7.1.1.2(b)	7.1.1.2(b)	Establish Communications with Other Mission Elements
	7.1.1.2(c)	7.1.1.2(c)	Establish Communications with Controlling Agency
	7.1 1.2(d)	7.1.1.2(d)	Get Tactical Update and Area Brief
	7.1.1.2(e)	7.1.1.2(e)	Confirm Friendly Force and Adversary Disposition on LINK 16/MI
	7.1.1.2(f)	7.1.1.2(f)	Establish Visual Contact with Other Mission Elements
	7.1.1.2(g)	7.1.1.2(g)	Establish AMIRS Contact with Other Mission Elements
	7.1.1.2(h)	7.1.1.2(h)	Establish NVG Contact with Other Mission Elements
7.1.1.3		duct RV	
	7.1.1.3(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members
	7.1.1.3(b)	7.1.1.2(b)	Establish Communications with Other Formation Members
	7.1.1.3(c)	7.1.1.3(c)	Conduct Formation Join-up
	7.1.1.3(d)	7 1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7.1.1.3(e)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members
	7.1.1 3(f)	7 1.1.2(g)	Establish AMIRS Contact with Other Formation Members
	7.1.1.3(g)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members
	7.1.1.3(h)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position
7.1.2			e Air Support RV
7.1.2.1		blish Contact	
	7.1.2.1(a)	7.1.1.2(a)	Establish Radar Contact with Other Mission Elements
	7.1.2.1(b)	7.1.1.2(c)	Establish Communications with Controlling Agency (ABCCC/AWA
	7.1.2.1(c)	7.1.1 2(b)	Establish Communications with Forward Air Controller (FAC)
	7.1.2.1(d)	7.1.1.2(d)	Get Tactical Update and Area Brief
	7.1.2.1(e)	7.1.2.1(e)	Get Initial Target Brief
	7.1.2.1(f)	7.1.1.2(f)	Establish Visual Contact with Other Mission Elements
	7.1.2.1(g)	7.1.1 2(g)	Establish AMIRS Contact with Other Mission Elements
	7.1.2.1(h)	7.1 1.2(h)	Establish NVG Contact with Other Mission Elements
7.1.2.2		duct RV	
	7.1.2.2(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members

Annex C - CF18 Air to Ground Goal Inventory

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	7.1.2.2(b)	7.1.1.2(b)	Establish Communications with Other Formation Members
	7.1 2.2(c)	7.1.1.3(c)	Conduct Formation Join-up
	7.1.2.2(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7.1 2.2(e)	7.1.1 2(f)	Establish Visual Contact with Other Formation Members
	7.1.2.2(f)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members
	7.1.2.2(g)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members
	7.1.2.2(h)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position
7.1.3	Cond	luct Armed Reco	nnaissance RV
7.1.3.1	Estat	olish Hold at TRI	P
	7.1.3.1(a)	7.1 1 1(a)	Identify TRP
	7.1.3 1(b)	7 1.1.1(b)	Establish TRP Hold
	7 1.3.1(c)	7.1.1.1(c)	Search for TRP
7.1.3.2	Estab	olish Contact	
	7.1.3.2(a)	7 1.1.2(a)	Establish Radar Contact with Other Mission Elements
	7.1.3 2(b)	7.1 1.2(b)	Establish Communications with Other Mission Elements
	7.1.3.2(c)	7.1.1.2(c)	Establish Communications with Controlling Agency
	7.1.3.2(d)	7.1.1.2(d)	Get Tactical Update and Area Brief
	7.1.3.2(e)	7.1.1.2(e)	Confirm Friendly Force and Adversary Disposition on LINK 16/MI
	7.1.3.2(f)	7.1.1.2(f)	Establish Visual Contact with Other Mission Elements
	7.1.3.2(g)	7.1.1.2(g)	Establish AMIRS Contact with Other Mission Elements
	7.1.3.2(h)	7.1.1.2(h)	Establish NVG Contact with Other Mission Elements
7.1.3.3	Conduct RV		
	7.1.3.3(a)	7 1.1.2(a)	Establish Radar Contact with Other Formation Members
	7.1.3.3(b)	7.1.1.2(b)	Establish Communications with Other Formation Members
	7 1.3.3(c)	7.1 1.3(c)	Conduct Formation Join-up
	7.1.3.3(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7 1.3.3(e)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members
	7.1.3.3(f)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members
	7.1.3.3(g)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members
	7.1.3.3(h)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position
7.1.4	Cond	uct TASMO RV	
7.1.4.1	Estab	lish Contact	
	7.1.4.1(a)	7.1.1.2(a)	Establish Radar Contact with Other Mission Elements
	7.1.4.1(b)	7.1 1.2(b)	Establish Communications with Other Mission Elements
	7.1.4.1(c)	7.1.4.1(c)	Conduct Weapons Check-In with Controlling Agency
	7.1.4.1(d)	7 1.1.2(d)	Get Tactical Update and Area Brief
	7 1.4.1(e)	7.1.1.2(e)	Confirm Friendly Force and Adversary Disposition on Link 16/MID
	7.1.4.1(f)	7.1.4.1(f)	Confirm Positive Radar Identification by Naval Controlling Agency

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	7.1 4.1(g)	7.1 1.2(f)	Establish Visual Contact with Other Mission Elements	
	7.1.4.1(h)	7.1.1.2(g)	Establish AMIRS Contact with Other Mission Elements	
	7.1.4.1(i)	7.1.1.2(h)	Establish NVG Contact with Other Mission Elements	
7.1.4.2	Cond	luct RV		
	7 1.4 2(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members	
	7.1.4.2(b)	7.1.1.2(b)	Establish Communications with Other Formation Members	
	7 1.4.2(c)	7.1.1.3(c)	Conduct Formation Join-up	
	7 1.4 2(d)	7 1.1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	
	7.1.4 2(e)	7.1.4.2(e)	Establish Radar Contact with Naval Ships	
	7 1.4.2(f)	7 1.4.2(f)	Deploy to CAP	
	7 1.4.2(g)	7.1.4.2(g)	Establish Visual Contact with Naval Ships	
	7.1.4.2(h)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members	
	7.1 4.2(1)	7.1 4.2(i)	Establish AMIRS Contact with Naval Ships	
	7.1.4.2(j)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	
	7.1.4.2(k)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	
	7.1.4.2(1)	7.1 4.2(1)	Establish NVG Contact with Naval Ships	
	7.1.4 2(m)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	
7.1.5	Conduct Air-to Air Refueling RV			
7.1.5.1	Estal	olish Contact		
	7.1.5.1(a)	7.1.1.2(e)	Confirm Friendly Force and Adversary Disposition on LINK 16/MI	
	7.1.5.1(b)	7 1.5.1(b)	Establish Radar Contact with AAR	
	7.1 5.1(c)	7.1 5.1(c)	Establish Communications with AAR	
	7 1.5.1(d)	7 1.5.1(d)	Conduct Pre AAR RV Checks	
	7.1.5.1(e)	7.1.5.1(e)	Establish Visual Contact with AAR	
	7.1.5.1(f)	7.1.5.1(f)	Establish AMIRS Contact With AAR	
	7.1.5.1(g)	7.1.5.1(g)	Establish NVG Contact with AAR	
7.1.5.2	Cond	luct Formation J	oin Up	
	7.1.5.2(a)	7.1.5.2(a)	Conduct AAR Sensors to Visual Intercept	
	7.1 5.2(b)	7.1.5.2(b)	Adopt AAR Towline Wasting Position	
	7.1.5.2(c)	7.1.5.2(c)	Join In Echelon Position	
	7.1 5.2(d)	7.1.5.2(d)	Position Astern AAR Hoses	
	7.1.5.2(e)	7.1.5.2(e)	Conduct Pre-Contact AAR Checks	
	7.1.5.2(f)	7.1.5.2(f)	Conduct AAR Sensors to NVG Intercept	
	7 1.5.2(g)	7.2.5 1(b)	Maintain Aircraft Control and Flight Position	
7.1.6	Conc	luct Sensors Sea	rch and Visual Look Out	
7.1.6.1	Cond	luct Radar Searc	h and Surveillance	
	7.1 6.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters	
	7.1.6 1(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members	

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	7.1.6 1(c)	7 2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements
	7.1.6.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns
	7.1.6.1(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns
	7.1.6.1(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts
	716.1(g)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF
	7.1.6.1(h)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays
7.1.6.2	Cor	nduct AMIRS Sea	rch and Surveillance
	7.1.6.2(a)	7.2.7 2(a)	Monitor and Maintain Assigned AMIRS Search Parameters
	7.1.6.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Members
	7.1 6 2(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elemer
	7.1.6 2(d)	7 2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns
	7.1.6.2(e)	7.2.7.2(e)	Advise on AMIRS Acquired Unknowns
	7.1 6.2(f)	7.2.7 2(f)	Sort Multiple Unknown Contacts with AMIRS
	7.1.6.2(g)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF
7.1.6.3	Cor	nduct Visual Sear	ch and Surveillance
	7 1.6.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns
	7 1.6.3(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members
	7.1 6 3(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Element
	7.1.6.3(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns
	7.1.6.3(e)	7.2.7.3(e)	Advise on Visually Acquired Unknowns
	7.1.6.3(f)	7 2.7.3(f)	Maintain NVG V1sual Search Patterns
	7.1 6.3(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members
	7.1.6 3(i)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements
	7.1.6.3(j)	7.2.7.3(1)	Monitor and Maintain NVG Contact with Unknowns
7.2	Cor	nduct Air Interdic	tion
7.2.1	Cor	nduct Ingress	
7.2.1.1	Per	form FLOT Cros	sing Procedures
	7.2.1.1(a)	7.2.1 1(a)	Reduce Aircraft Emissions (EMCON Procedures)
	7.2.1.1(b)	7.2.1.1(b)	Ingress at Low Altitude (Sophisticated Environment)
	7 2.1.1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environment)
	7.2.1.1(d)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)
	7.2.1.1(e)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)
7.2.2	Cor	nduct Target Atta	ck
7.2.2.1	Cor	nduct General Pu	rpose (GP) Bomb Attack
	7.2.2.1(a)	7.2.2.1(a)	Conduct A/G Check
	7.2.2.1(b)	7.2.2.1(b)	Identify Initial Point Visually
	7 2.2.1(c)	7.2.2.1(c)	Designate/Add Offset at Initial Point
	7.2.2.1(d)	7 2.2.1(d)	Manoeuvre to Weapons Delivery Parameters
	7.2.2 1(e)	7.2.2 1(b)	Identify Target/DMPI Visually

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	7.2.2.1(f)	7.2.2.1(f)	Conduct Element Split Attacks
	7.2.2.1(g)	7.2.2.1(g)	Validate Weapons Solution Display
	7 2.2.1(h)	7.2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)
	7.2 2.1(i)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre
	7.2.2.1(1)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre
	7.2.2.1(k)	7.2.2.1(k)	Conduct BDA
	7.2.2.1(l)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7.2 2.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.2.2 l(n)	7.2.2.1(n)	Search for Initial Point
	7.2.2.1(0)	7.2 2.1(o)	Search for Target
	7.2.2.1(p)	7.2.2.1(p)	Identify Initial Point with NVG
	7.2.2.1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG
7.2.2.2	Cond	uct Precision Gu	ided Munitions (PGM) Attack
	7.2.2.2(a)	7.2.2.1(a)	Conduct A/G Check
	7.2.2 2(b)	7.2.2.2(b)	Designate Target Position
	7.2.2.2(c)	7 2.2.2(c)	Identify Target Area with Aircraft Sensors
	7.2.2 2(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters
	7.2.2.2(e)	7.2 2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16
	7.2.2.2(f)	7.2.2.1(g)	Validate Weapons Solution Display
	7.2.2.2(g)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)
	7.2.2.2(h)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery
	7.2.2.2(1)	7.2.2.2(i)	Conduct Buddy-Lasing LGB Delivery
	7.2.2.2(j)	7.2.2 2(j)	Update Target Designation
	7.2.2.2(k)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre
	7.2.2.2(1)	7.2.2.1(k)	Conduct BDA
	7.2.2.2(m)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7 2.2.2(n)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7 2.2.2(o)	7.2.2 1(j)	Conduct Frag Avoidance Manoeuvre
7.2.3	Cond	uct Egress	
7.2.3.1		rm Formation R	-
	7.2.3.1(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members
	7.2.3.1(b)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7.2 3.1(c)	7.1.1.3(c)	Conduct Formation Join-up
	7.2 3.1(d)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members
	7.2.3.1(e)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members
	7.2.3.1(f)	7 1.1.2(h)	Establish NVG Contact with Other Formation Members
7.2.3.2		m FLOT Crossi	-
	7.2.3.2(a)	7.2.1.1(a)	Allow Aircraft Emmisions for Identification

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	7.2 3.2(b)	7 2.3.2(b)	Egress at Low Altitude
	7.2.3.2(c)	7.2.3.2(c)	Egress at Medium/High Altitude
	7.2 3.2(d)	7.2.3.2(d)	Conduct Lame Duck Procedures
	7 2.3.2(e)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)
	7.2.3.2(f)	7 2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)
7.2.4	Ini	tiate Recovery/Tr	ansit to Follow on Tasking
7.2.4.1	Pas	s MISREP	
	7.2.4 1(a)	7241(a)	Pass IFREP
7.2.4.2	Per	form Recovery C	hecks
	7.2.4.2(a)	7 2.4.2(a)	Conduct BD Check
	7.2 4.2(b)	7.2.4.2(b)	Conduct Fence Out Check
7.2.5	Est	ablish and Maint	ain Tactical Formation
7.2.5.1	Est	ablish Tactical Fo	ormation
	7.2.5.1(a)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen
	7.2 5 1(b)	7.2 5.1(b)	Maintain Aircraft Control and Flight Position
	7.2.5.1(c)	7.2.5.1(c)	Execute Manoeuvre Turns
	7.2.5.1(d)	7.1 1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
7.2.5.2	Ma	intain Tactical Fo	ormation Integrity
	7.2.5.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation
	7.2.5.2(b)	7.2.5.2(b)	Maintaın Visual Mutual Support
	7.2.5.2(c)	7.2.5.2(c)	Maintain Positional Mutual Support
	7 2.5.2(d)	7.1.1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7.2 5.2(e)	7.2.5.2(e)	Maintain Visual Mutual Support with NVG
	7.2.5.2(f)	7.2.5.2(f)	Communicate with Formation Members via Discreet Frequency
	7.2.5.2(g)	7.2.5.2(g)	Communicate with Formation Members via Data Link
7.2.6	Co	nduct Enroute Na	vigation
7.2.6.1		here to Airspace (Control Measures
	7.2.6 1(a)	7.2.6.1(a)	Maintain Ground Track
	7.2 6.1(b)	7.2.6.1(b)	Adhere to ACO
	7 2.6.1(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings
	7.2.6.1(d)	7.2.6.1(d)	Monitor and Avoid ACO Restricted Areas
7.2.6.2	Cor	nduct System/Visu	ual Navigation
	7.2 6.2(a)	7.2.6.2(a)	Navigate Using Visual References
	7.2.6.2(b)	7 2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs
	7.2.6.2(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates
	7.2.6.2(d)	7.2.6 2(d)	Employ Watch Map Ground Technique
	7.2.6.2(e)	7.2.6.2(e)	Arrive at Target at Predetermined TOT
	7.2.6.2(f)	7.2.6.2(f)	Navigate Using NVG Visual References
7.2.6.3	Ave	oid Hazards	

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	7.2 6.3(a)	7.2 6.3(a)	Monitor and Avoid Weather
	7.2.6 3(b)	7.2.6.3(b)	Monitor and Avoid Obstacles
	7.2.6.3(c)	7.2.6.3(c)	Monitor and Avoid Terrain
	7.2.6.3(e)	7.2.6.3(e)	Monitor and Avoid Other Aircraft
7.2.7	Co	nduct Sensors Sea	arch and Visual Look Out
7.2.7.1	Сог	nduct Radar Sear	ch and Surveillance
	7 2.7.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters
	7.2.7.1(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members
	7 2.7.1(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements
	7.2.7.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns
	7.2.7.1(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns
	7.2.7.1(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts
	7.2 7.1(g)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF
	7 2 7.1(h)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays
7.2.7.2	Cor	nduct AMIRS Sea	arch and Surveillance
	7.2.7.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters
	7.2.7.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Members
	7.2.7.2(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elemer
	7.2.7.2(d)	7.2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns
	7.2.7.2(e)	7.2.7.2(e)	Advise on AMIRS Acquired Unknowns
	7.2.7 2(f)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS
	7.2.7.2(g)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF
7.2.7.3	Con	duct Visual Sear	ch and Surveillance
	7.2.7.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns
	7.2.7.3(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members
	7.2 7.3(c)	7 2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Element
	7.2.7.3(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns
	7.2 7.3(e)	7.2.7.3(e)	Advise on Visually Acquired Unknowns
	7.2.7.3(f)	7 2.7.3(f)	Maintain NVG Visual Search Patterns
	7.2.7.3(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members
	7.2.7.3(h)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements
	7.2.7.3(1)	7.2.7.3(i)	Monitor and Maintain NVG Contact with Unknowns
7.3	Con	duct OAS Close	Air Support
7.3.1	Con	duct Ingress	
7.3.1.1	Peri	form FLOT Cros	sing Procedures
	7.3.1.1(a)	7.2.1.1(a)	Reduce Aircraft Emissions (EMCON Procedures)
	7.3.1.1(b)	7.2.1.1(b)	Ingress at Low Altitude (Sophisticated Environment)
	7.3.1.1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environement)
	7 3.1 1(d)	7 2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)

	7.3.1 1(e)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)
7.3.2	Receiv	e Target Data a	nd Confirm Target Location
7.3.2.1	Receiv	e Target Data	
	7.3.2.1(a)	7.3 2.1(a)	Copy Target Brief from FAC
	7.3.2.1(b)	7.3.2.1(b)	Read Back Mandatory Items to FAC
	7.3.2.1(c)	7.3.2.1(c)	Enter Target Location in Aircraft database
	7 3.2.1(d)	7.3.2.1(e)	Confirm Target Location and Restrictions on MAP/HSD
	7 3.2.1(e)	7.3.2.1(e)	Communicate with FAC via DATA LINK 16
7.3.2.2	Confir	m Target Locat	ion
	7.3.2.2(a)	7.3.2.2(a)	Receive Target Description Brief from FAC
	7.3.2 2(b)	7.3.2.2(b)	Find Target Using Sensors
	7.3.2.2(c)	7 3.2.2(c)	Find Target Visually
	7.3.2.2(d)	7.3.2.2(d)	Communicate Target Acquired
	7.3.2.2(e)	7.3.2.2(e)	Describe Target Area and Target to FAC
	7.3.2.2(f)	7.3.2.2(f)	Conduct Target Run In
	7.3.2.2(g)	7.3.2.1(e)	Communicate with FAC via DATA LINK 16
	7.3.2.2(h)	7.3.2.2(h)	Find Target with NVG
7.3.3	Condu	ict Target Attac	k
7.3.3.1	Condu	ict General Purp	oose (GP) Bomb Attack
	7.3.3.1(a)	7 2.2.1(a)	Conduct A/G Check
	7.3.3.1(b)	7.2.2.1(b)	Identify Initial Point Visually
	7.3.3.1(c)	7.2.2.1(c)	Designate/Add Offset at Initial Point
	7.3.3.1(d)	7.2.2 1(d)	Manoeuvre to Weapons Delivery Parameters
	7.3.3.1(e)	7.2.2.1(b)	Identify Target/DMPI Visually
	7.3.3.1(f)	7.2.2.1(f)	Conduct Element Split Attacks
	7 3.3.1(g)	7.2.2.1(g)	Validate Weapons Solution Display
	7.3.3.1(h)	7.2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)
	7.3.3.1(1)	7.2 2.1(i)	Conduct Safe Escape Manoeuvre
	7.3.3.1(J)	7.2 2.1(j)	Conduct Frag Avoidance Manoeuvre
	7.3.3.1(k)	7.2.2.1(k)	Conduct BDA
	7.3.3.1(1)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7.3.3.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.3.3 1(n)	7.2.2.1(n)	Search for Initial Point
	7.3.3.1(o)	7 2 2.1(o)	Search for Target
	7.3.3 l(p)	7.2.2.1(p)	Identify Initial Point with NVG
	7.3.3.1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG
7.3.3.2	Condu	ict Precision Gu	ided Munitions (PGM) Attack

7.3.3.2

7.3 3.2(a) 7 2 2.1(a) Conduct A/G Check

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	7.3.3.2(b)	7.2.2.2(b)	Designate Target Position
	7.3 3.2(c)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors
	7 3.3.2(d)	7.2 2 1(d)	Manoeuvre to Weapons Delivery Parameters
	7.3.3.2(e)	7.2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16
	7 3.3.2(f)	7.2.2.1(g)	Validate Weapons Solution Display
	7.3.3.2(g)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)
	7.3.3.2(h)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery
	7.3.3 2(1)	7.2.2.2(i)	Conduct Buddy-Lasing LGB Delivery
	7.3.3 2(j)	7.2.2.2(J)	Update Target Designation
	7.3.3.2(k)	7.2.2.1(1)	Conduct Safe Escape Manoeuvre
	7.3.3 2(1)	7.2.2.1(k)	Conduct BDA
	7.3.3.2(m)	7.2 2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7 3.3.2(n)	7 2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.3.3.2(o)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre
7.3.4	Con	duct Egress	
7.3.4.1	Perfe	orm Formation	Rejoin
	7.3.4.1(a)	7.1 1.2(a)	Establish Radar Contact with Other Formation Members
	7 3 4.1(b)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7 3.4.1(c)	7 1.1.3(c)	Conduct Formation Join-up
	7.3.4.1(d)	7.1 1.2(f)	Establish Visual Contact with Other Formation Members
	7.3.4.1(e)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members
7.3.4.2	Perfe	orm FLOT Cros	sing Procedures
	7.3.4.2(a)	7.2.1.1(a)	Allow Aircraft Emmissions for Identification
	7.3 4.2(b)	7.2.3.2(b)	Egress at Low Altitude
	7.3.4.2(c)	7.2.3.2(c)	Egress at Medium/High Altitude
	7 3.4.2(d)	7.2.3.2(d)	Conduct Lame Duck Procedures
	7.3.4.2(e)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)
	7.3.4.2(f)	7.2.1 1(e)	Adjust to Medium/High Altitude (Permissive Environment)
7.3.5		-	ansit to Follow on Tasking
7.3.5.1		MISREP	
7 1 E D	7.3.5.1(a)	7.2 4.1(a)	Pass IFREP
7.3.5.2	7.3.5.2(a)	orm Recovery C 7 2 4.2(a)	Conduct BD Check
	7.3.5.2(a) 7.3.5.2(b)	7.2.4.2(a) 7.2.4.2(b)	Conduct Fence Out Check
7.3.6	• •		ain Tactical Formation
7.3.6.1		blish Tactical Fo	
	7.3.6.1(a)	7 2.5 1(a)	Establish Tactical Roles - Tactical Leads and Wingmen
	7.3.6.1(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position
	7.3 6.1(c)	7 2.5.1(c)	Execute Manoeuvre Turns

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	7.3.6 1(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
7.3.6.2	Mai	intain Tactical F	ormation and Integrity
	7.3.6.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation
	7.3.6.2(b)	7.2.5.2(b)	Maintain Visual Mutual Support
	7.3 6.2(c)	7.2.5.2(c)	Maintain Positional Mutual Support
	7.3.6.2(d)	7.1 1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7.3.6.2(e)	7.2.5.2(e)	Maintain V1sual Mutual Support with NVG
	7.3.6 2(f)	7.2 5.2(f)	Communicate with Formation Members via Discreet frequency
	7.3.6.2(g)	7.2.5.2(g)	Communicate with Formation Members via Data Link
7.3.7	Con	iduct Enroute Na	vigation
7.3.7.1	Adh	ere to Airspace	Control Measures
	7.3.7 l(a)	7.2.6.1(a)	Maintain Ground Track
	7 3.7.1(b)	7.2.6.1(b)	Adhere to ACO
	7.3 7.1(c)	7.2 6.1(c)	Adjust G/S to Make Tasking Timings
	7.3.7.1(d)	7.2.6.1(d)	Monitor and Avoid ACO Restricted Areas
7.3.7.2	Con	duct System/Visi	al Navigation
	7.3.7.2(a)	7.2.6.2(a)	Navigate Using Visual References
	7.3.7.2(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs
	7.3.7.2(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates
	7.3.7.2(d)	7.2.6.2(d)	Employ Watch Map Ground Technique
	7.3.7.2(e)	7.2.6.2(e)	Arrive at Target at Predetermined TOT
	7.3.7.2(f)	7.2.6.2(f)	Navigate Using NVG Visual References
7.3.7.3	Avo	id Hazards	
	7.3.7.3(a)	7.2.6.3(a)	Monitor and Avoid Weather
	7.3.7 3(b)	7.2.6.3(b)	Monitor and Avoid Obstacles
	7.3.7.3(c)	7.2.6.3(c)	Monitor and Avoid Terrain
	7.3.7.3(d)	7.2 6.3(e)	Monitor and Avoid Other Aircraft
7.3.8	Con	duct Sensors Sea	rch and Visual Look Out
7.3.8.1	Con	duct Radar Sear	ch and Surveillance
	7.3.8.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters
	7.3.8.1(b)	7.2 7.1(b)	Monitor and Maintain Radar Contact with Formation Members
	7.3.8.1(c)	7.2 7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements
	7.3.8.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns
	7.3.8.1(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns
	7.3 8.1(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts
	7.3.8.1(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays
	7.3.8.1(h)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF
7.3.8.2	Con	duct AMIRS Sea	arch and Surveillance
	7.3.8.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters

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	7292(1)	7070(1)	
	7.3.8.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Members
	7.3 8.2(c)	7.2 7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elemer
	7.3 8 2(d)	7.2 7.2(g)	Interrogate Unknown AMIRS Contacts with IFF
	7.3.8.2(e)	7.2 7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns
	7.3.8.2(f)	7.2.7.2(e)	Advise on AMIRS Acquired Unknowns
	7.3 8.2(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS
7.3.8.3			ch and Surveillance
	7.3.8.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns
	7.3.8.3(b)	7.2.7 3(b)	Monitor and Maintain Visual Contact with Formation Members
	7.3.8.3(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Element
	7.3.8 3(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns
	7 3.8.3(e)	7.2.7.3(e)	Advise on Visually Acquired Unknowns
	7.3 8 3(f)	7.2 7.3(f)	Maintain NVG Visual Search Patterns
	7.3.8.3(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members
	7.3.8.3(h)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements
	7 3.8.3(1)	7.2.7.3(1)	Monitor and Maintain NVG Contact with Unknowns
7.4	Con	duct Armed Rec	onnaissance
7.4.1	Con	duct Ingress	
7.4.1.1	Peri	form FLOT Cros	sing Procedures
	7.4.1 1(a)	7.2.1.1(a)	Reduce Aircraft Emissions (EMCON Procedures)
	7.4.1.1(b)	7.2.1.1(b)	Ingress at Low Altitude (Sophisticated Environment)
	7.4.1.1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environement)
	7.4.1.1(d)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)
	7.4.1.1(e)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)
7.4.2	Loc	ate Enemy Targe	ets
7.4.2.1	Loc	ate Enemy Targe	t
	7.4.2.1(a)	7.4.2.1(a)	Conduct Visual Lookout
	7.4.2 1(b)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information
	7 4.2.1(c)	7.4.2.1(c)	Acquire Enemy Targets on LINK 16/MIDS Displays
	7.4.2.1(d)	7.4.2.1(d)	Find Target with Radar Search Sort and Target Contract
	7.4.2.1(e)	7.4.2.1(e)	Utilize Lateral Mission Element Tactical Information
	7.4.2.1(f)	7.4.2.1(f)	Find Target with AMIRS Search Sort and Target Contract
	7.4.2.1(g)	7.4.2.1(g)	Conduct Visual Lookout with NVG
7.4.2.2	Con	firm Enemy Tar	get
	7.4.2.2(a)	7 4.2.2(a)	Report Target via LINK 16/MIDS Secure Communications
	7.4 2 2(b)	7.4.2.2(b)	Report Target via Have Quick II Secure Communications
	7.4.2.2(c)	7.4 2.2(c)	Utilize C2 Directive and Descriptive Commentary
	7.4.2.2(d)	7 2 2.1(b)	Identify Target/DMPI V1sually
	7.4.2.2(e)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors

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	7.4.2.2(f)	7.2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16
	7.4.2.2(g)	7.2.2.1(p)	Identify Initial Point with NVG
7.4.3		uct Target Atta	·
7.4.3.1		-	pose (GP) Bomb Attack
	7.4.3 1(a)	7.2.2.1(b)	Identify Initial Point Visually
	7.4.3 1(b)	7.2.2.1(c)	Designate/Add Offset at Initial Point
	7.4.3.1(c)	7.2.2.1(a)	Conduct A/G Check
	7.4.3.1(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters
	7.4.3 1(e)	7 2.2 1(b)	Identify Target/DMPI Visually
	7.4 3.1(f)	7.2.2.1(f)	Conduct Element Split Attacks
	7.4.3.1(g)	7.2.2.1(g)	Validate Weapons Solution Display
	7.4.3.1(h)	7.2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)
	7 4.3.1(1)	7 2.2.1(1)	Conduct Safe Escape Manoeuvre
	7.4.3.1(J)	7 2.2.1(j)	Conduct Frag Avoidance Manoeuvre
	7.4.3.1(k)	7.2.2.1(k)	Conduct BDA
	7.4.3.1(l)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7.4.3.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.4.3.1(n)	7.2.2.1(n)	Search for Initial Point
	7.4 3.1(o)	7.2.2.1(o)	Search for Target
	7.4.3.1(p)	7.2.2.1(p)	Identify Initial Point with NVG
	7.4.3.1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG
7.4.3.2	Cond	uct Precision Gu	ided Munitions (PGM) Attack
	7.4.3.2(a)	7.2 2.1(a)	Conduct A/G Check
	7.4.3.2(b)	7.2.2.2(b)	Designate Target Position
	7.4.3.2(c)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors
	7 4.3 2(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters
	7.4.3 2(e)	7 2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16
	7.4.3.2(f)	7.2.2.1(g)	Validate Weapons Solution Display
	7.4.3.2(g)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)
	7.4.3.2(h)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery
	7.4.3.2(1)	7.2.2.2(i)	Conduct Buddy-Lasing LGB Delivery
	7.4 3.2(j)	7.2.2.2(J)	Update Target Designation
	7.4.3.2(k)	7.2.2.2(i)	Conduct Buddy-Lasing LGB Delivery
	7 4.3 2(1)	7 2.2.1(k)	Conduct BDA
	7.4.3.2(m)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7.4.3.2(n)	7.2 2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.4 3.2(o)	7.2.2.1(1)	Conduct Safe Escape Manoeuvre
	7.4.3.2(p)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre

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7.4.4	Conduct Egress			
7.4.4.1	Per	Perform Formation Rejoin		
	7.4.4.1(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members	
	7.4.4.1(b)	7 1.1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	
	7.4.4.1(c)	7.1.1.3(c)	Conduct Formation Join-up	
	7.4.4.1(d)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	
	7.4.4 1(e)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	
7.4.4.2	Per	form FLOT Cross	ing Procedures	
	7.4.4 2(a)	7.2.1.1(a)	Allow Aircraft Emmisions for Identification	
	7.4.4.2(b)	7.2.3.2(b)	Egress at Low Altitude	
	7.4.4.2(c)	7.2.3.2(c)	Egress at Medium/High Altitude	
	7.4.4 2(d)	7.2.3.2(d)	Conduct Lame Duck Procedures	
	7.4.4.2(e)	7 2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	
	7.4.4.2(f)	7.2.1 1(e)	Adjust to Medium/High Altitude (Permissive Environment)	
7.4.5	Init	tiate Recovery/Tra	nsit to Follow on Tasking	
7.4.5.1	Pas	s MISREP		
	7.4.5.1(a)	7.2.4.1(a)	Pass IFREP	
7.4.5.2	Per	form Recovery Ch	ecks	
	7.4.5 2(a)	7.2.4 2(a)	Conduct BD Check	
	7.4.5.2(b)	7 2.4.2(b)	Conduct Fence Out Check	
7.4.6	Est	ablish and Maintai	n Formation	
7.4.6.1	Est	ablish Tactical For	mation	
	7.4.6.1(a)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen	
	7.4 6.1(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	
	7.4 6.1(c)	7.2.5.1(c)	Execute Manoeuvre Turns	
	7.4.6.1(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	
7.4.6.2	Ma	intain Tactical For	mation Integrity	
	7.4.6.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation	
	7.4.6.2(b)	7.2.5.2(b)	Maintain Visual Mutual Support	
	7 4.6.2(c)	7 2.5.2(c)	Maintain Positional Mutual Support	
	7.4.6.2(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	
	7.4.6 2(e)	7.2.5 2(e)	Maintain Visual Mutual Support with NVG	
	7.4.6.2(f)	7.2.5.2(f)	Communicate with Formation Members via Discreet frequency	
	7.4.6.2(g)	7 2.5.2(g)	Communicate with Formation Members via Data Link	
7.4.7	Cor	nduct Enroute Nav	igation	
7.4.7.1	Adl	here to Airspace Co	ontrol Measures	
	7.4.7.1(a)	7.2.6.1(a)	Maintain Ground Track	
	7.4.7.1(b)	7.2.6.1(b)	Adhere to ACO	
	7 4.7.1(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings	

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7 4 7 1(d)	7.2.6.1(d)	Monitor and Avoid ACO Restricted Areas
	-	Navigate Using Visual References
- /		Navigate Using Sensors Information Displayed on HSD and DDIs
. ,		Perform Navigation Systems Designations/Updates
		Employ Watch Map Ground Technique
. ,		Arrive at Target at Predetermined TOT
7.4.7 2(f)		Navigate Using NVG Visual References
Avo	id Hazards	
7.4.7.3(a)	7 2.6.3(a)	Monitor and Avoid Weather
7.4.7.3(b)	7.2 6.3(b)	Monitor and Avoid Obstacles
7.4.7.3(c)	7.2.6.3(c)	Monitor and Avoid Terrain
7 4.7.3(d)	7.2.6.3(e)	Monitor and Avoid Other Aircraft
Con	duct Sensors Sea	arch and Visual Look Out
Con	duct Radar Sear	ch and Surveillance
7.4.8.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters
7.4.8.1(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members
7.4 8.1(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements
74.8.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns
7.4.8.1(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns
7 4.8.1(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts
7.4.8.1(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays
7.4.8.1(h)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF
Con	duct AMIRS Sea	arch and Surveillance
7.4.8.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters
7.4.8.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Members
7.4.8.2(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elemer
7.4.8 2(d)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF
7.4.8.2(e)	7.2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns
7.4.8.2(f)	7 2.7.2(e)	Advise on AMIRS Acquired Unknowns
7.4.8.2(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS
Con	duct Visual Sear	ch and Surveillance
7.4.8.3(a)	7 2.7.3(a)	Maintain Visual Search Patterns
7.4.8 3(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members
7.4 8.3(c)	7 2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Element
7.4.8.3(d)	7 2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns
7.4.8.3(e)	7.2.7 3(e)	Advise on Visually Acquired Unknowns
7.4.8.3(f)	7.2.7.3(f)	Maintain NVG V1sual Search Patterns
	7 4.7 2(a) $7.4.7.2(b)$ $7.4.7.2(c)$ $7.4.7.2(c)$ $7.4.7.2(c)$ $7.4.7.2(c)$ $7.4.7.2(c)$ $7.4.7.2(c)$ $7.4.7.3(c)$ $7.4.8.1(c)$ $7.4.8.2(c)$ $7.4.8.2(c)$ $7.4.8.2(c)$ $7.4.8.2(c)$ $7.4.8.2(c)$ $7.4.8.2(c)$ $7.4.8.2(c)$ $7.4.8.2(c)$ $7.4.8.3(c)$ 7.4	Conduct System/Vis7 4.7 2(a)7.2.6.2(a)7.4.7.2(b)7 2.6 2(b)7.4.7.2(c)7.2 6.2(c)7.4.7.2(d)7.2.6.2(d)7.4.7.2(e)7.2.6.2(e)7.4.7.2(f)7.2.6.2(f)Avoid Hazards7.4.7.3(a)7 2.6.3(a)7.4.7.3(b)7.2 6.3(b)7.4.7.3(c)7.2.6.3(c)7.4.7.3(d)7.2.6.3(c)7.4.7.3(d)7.2.6.3(c)Conduct Sensors SearConduct Radar Sear7.4.7.3(d)7.2.7.1(a)7.4.8.1(a)7.2.7.1(b)7.4.8.1(b)7.2.7.1(c)7.4.8.1(c)7.2.7.1(c)7.4.8.1(f)7.2.7.1(c)7.4.8.1(g)7.2.7.1(f)7.4.8.2(a)7.2.7.2(a)Conduct AMIRS Sear7.4.8.2(b)7.2.7.2(a)7.4.8.2(c)7.2.7.2(c)7.4.8.2(c)7.2.7.2(c)7.4.8.2(g)7.2.7.2(c)7.4.8.2(g)7.2.7.2(c)7.4.8.2(g)7.2.7.2(c)7.4.8.2(g)7.2.7.2(c)7.4.8.2(g)7.2.7.2(c)7.4.8.2(g)7.2.7.2(c)7.4.8.2(g)7.2.7.3(a)7.4.8.3(a)7.2.7.3(b)7.4.8.3(a)7.2.7.3(c)7.4.8.3(a)7.2.7.3(c)7.4.8.3(a)7.2.7.3(c)7.4.8.3(a)7.2.7.3(c)7.4.8.3(a)7.2.7.3(c)7.4.8.3(a)7.2.7.3(c)

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	7.4.8.3(g)	7.2 7.3(g)	Monitor and Maintain NVG Contact with Formation Members
	7.4.8.3(h)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements
	7.4.8 3(i)	7.2.7.3(1)	Monitor and Maintain NVG Contact with Unknowns
7.5	Con	duct TASMO	
7.5.1	Con	duct Ingress	
7.5.1.1		orm FLOT Cros	-
	7.5.1 1(a)	7.2 1.1(a)	Reduce Aircraft Emissions (EMCON Procedures)
	7.5.1.1(b)	7.2.1.1(b)	Ingress at Low Altitude (Sophisticated Environment)
	7 5.1.1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environment)
	7.5.1.1(d)	7.2 1.1(d)	Descend to Low Altitude (Sophisticated Environment)
	7.5 1 1(e)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)
7.5.2			over for Friendly Maritime Forces (Air Threats)
7.5.2.1	Esta 7.5.2.1(a)	blish CAPs 7.2 5.2(a)	Optimize Formation for Tactical Situation
	7.5.2 1(a) 7.5.2 1(b)		Conduct CAP
7.5.2.2		7.5.2.1(b)	
1.5.2.2	7.5.2.2(a)	Out Enemy Air 7.5.2.2(a)	Employ Radar Search Sort and Target Contract
	7 5.2.2(b)	7.4.2.1(a)	Conduct Visual Lookout
	7.5.2 2(c)	7 4.2.1(b)	Respond to displayed RWR Threat Emission Information
	7.5.2.2(d)	7 5.2.2(d)	Initiate and Monitor EID of Unknowns
	7 5.2.2(e)	7.5.2.2(e)	Advise on Approaching Threats
	7.5.2.2(f)	7.5.2.2(f)	Advise on Visually Acquired Threats
	7.5.2.2(g)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays
	7 5 2.2(h)	7.5.2.2(g)	VID Unknowns
	7.5.2.2(1)	7 4.2.2(a)	Employ LINK 16/MIDS Secure Communications
	7 5 2.2(j)	7.4.2.2(c)	Utilize C2 Directive and Descriptive Commentary
	7.5.2.2(j)	7.4 2.1(e)	Utilize Lateral Mission Element Tactical Information
	7.5.2.2(l)	7.5.2.2(1)	Employ AMIRS Search Sort and Target Contract
	7.5.2.2(n)	7 2.7.1(g)	Interrogate Unknown Radar Contacts with IFF
	7.5.2.2(m)	7 4 2.2(b)	Employ Have Quick II Secure Communications
	7.5.2.2(n) 7.5.2.2(o)	7.4.2.1(g)	Conduct Visual Lookout with NVG
	7.5.2.2(p)	7.5.2.2(p)	VID Unknowns with NVG
7.5.2.3	· · ·	G 7	eraft Situational Awareness
,	7.5.2.3(a)	7.5.2.3(a)	Employ Tactical Deception
	7.5.2 3(b)	7.5.2 3(b)	Dispense Chaff
	7.5.2.3(c)	7.5.2.3(c)	Employ Jammers
	7.5.2.3(d)	7.5.2.3(d)	Employ BVR Deception Tactics
7.5.2.4		y Enemy Air Th	
	7.5.2.4(a)	7 5 2.4(a)	Manoeuvre/Expose the Tactical Formation

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	7.5.2.4(b)	7.5.2.4(b)	Illuminate Enemy Air RWR
	7.5.2.4(c)	7.5.2.4(c)	Enhance Enemy Air Radar Acquisition
	7.5.2 4(d)	7.5.2.4(d)	Draw Enemy Aır Away
	7.5.2.4(e)	7.5.2 4(e)	Negate Enemy Air Weapons Employment
7.5.2.5	Ne	gate Enemy Air Th	nreat
	7.5.2.5(a)	7.5.2 5(a)	Deny Enemy Air Weapons Solution
	7.5.2.5(b)	7.5 2.5(b)	Negate Enemy Air Weapons Employment
	7.5.2 5(c)	7.5.2.5(c)	Employ Air-to-Air RMD
	7.5.2.5(d)	7.5 2.5(d)	Employ Air-to-Air IRMD
	7.5.2 5(e)	7.5.2.5(e)	Employ AAGD
	7.5.2.5(f)	7.5.2.5(f)	Egress Engagement Safely
	7.5.2.5(g)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information
	7.5 2.5(h)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays
7.5.2.6	Co	nduct Air Intercep	t
	7.5.2.6(a)	7 5.2.6(a)	Manoeuvre Aircraft to Intercept Enemy
	7.5.2.6(b)	7.5.2.5(b)	Negate Enemy Air Weapons Employment
	7.5.2.6(c)	7.5.2.5(a)	Deny Enemy Air Weapons Solution
7.5.2.7	De	stroy Enemy Air T	hreat
	7.5.2.7(a)	7.5.2.7(a)	Manoeuvre to a Weapons Engagement Zone
	7.5.2.7(b)	7.2.2.1(g)	Validate Weapons Solution Display
	7.5.2.7(c)	7.5.2.7(c)	Employ Weapons
	7.5 2.7(d)	7.5.2.7(d)	Maintain Post Attack Offensive
	7.5.2.7(e)	7.5.2.5(f)	Egress Engagement Safely
	7 5.2.7(f)	7.5.2.7(f)	Assess Post Merge ACM Options
	7.5.2.7(g)	7.5.2.7(g)	Monitor Weapon Fly Out
7.5.3	Pr	ovide Defensive Co	ver for Friendly Maritime Forces (SurfaceThreats)
7.5.3.1	Se	ek Out Enemy Nav	al Surface Threats
	7.5.3.1(a)	7 4.2.1(a)	Conduct Visual Lookout
	7.5.3.1(b)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information
	7.5 3.1(c)	7 4.2.1(c)	Acquire Enemy Targets on LINK 16/MIDS Displays
	7.5.3.1(d)	7.4.2.1(d)	Find Target with Radar Search Sort and Target Contract
	7.5.3.1(e)	7.4.2.1(e)	Utilize Lateral Mission Element Tactical Information
	7 5.3.1(f)	7.4.2.1(f)	Find Target with AMIRS Search Sort and Target Contract
7.5.3.2	Co	nfirm Enemy Nava	ll Target
	7.5.3.2(a)	7 4.2 2(a)	Report Target via LINK 16/MIDS Secure Communications
	7.5.3.2(b)	7.4.2.2(b)	Report Target via Have Quick II Secure Communications
	7.5.3.2(c)	7.4.2.2(c)	Utilize C2 Directive and Descriptive Commentary
	7.5.3.2(d)	7.2.2 1(b)	Identify Target/DMPI Visually

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	7.5.3.2(e)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors
	7.5.3.2(f)	7.2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16
	7.5.3 2(g)	7.2.2.1(p)	Identify Target/DMPI with NVG
7.5.4	Cond	uct Target Attac	sk
7.5.4.1	Cond	uct General Pur	pose (GP) Bomb Attack
	7 5.4.1(a)	7.2.2.1(a)	Conduct A/G Check
	7.5.4.1(b)	7.2 2.1(b)	Identify Initial Point Visually
	7.5.4.1(c)	7.2.2.1(c)	Designate/Add Offset at Initial Point
	7.5.4.1(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters
	7.5.4.1(e)	7.2.2.1(b)	Identify Target/DMPI Visually
	7.5 4.1(f)	7.2.2.1(f)	Conduct Element Split Attacks
	7.5 4.1(g)	7.2.2.1(g)	Validate Weapons Solution Display
	7.5.4.1(h)	7.2.2 1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)
	7 5.4.1(i)	7.2 2.1(1)	Conduct Safe Escape Manoeuvre
	7.5.4.1(j)	7 2.2.1(j)	Conduct Frag Avoidance Manoeuvre
	7.5.4.1(k)	7.2 2.1(k)	Conduct BDA
	7.5.4.1(l)	7.2.2.1(l)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7.5.4.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.5 4.1(n)	7.2.2 l(n)	Search for Initial Point
	7.5.4.1(o)	7.2.2.1(o)	Search for Target
	7.5 4.1(p)	7.2.2.1(p)	Identify Initial Point with NVG
	7 5.4 1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG
7.5.4.2	Condu	uct Precision Gu	ided Munitions (PGM) Attack
	7.5 4.2(a)	7.2.2.1(a)	Conduct A/G Check
	7.5.4.2(b)	7.2.2.2(b)	Designate Target Position
	7.5.4.2(c)	7.2 2.2(c)	Identify Target Area with Aircraft Sensors
	7.5.4.2(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters
	7 5.4.2(e)	7.2 2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16
	7.5.4.2(f)	7.2.2.1(g)	Validate Weapons Solution Display
	7 5.4.2(g)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)
	7.5.4 2(h)	7 2.2.2(h)	Conduct Self-Lasing LGB Delivery
	7.5.4.2(1)	7.2.2.2(1)	Conduct Buddy-Lasing LGB Delivery
	7.5.4 2(j)	7.2.2 2(J)	Update Target Designation
	7.5.4.2(k)	7.2.2.1(1)	Conduct Safe Escape Manoeuvre
	7.5.4.2(1)	7.2.2.1(k)	Conduct BDA
	7.5 4.2(m)	7.2.2 1(l)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7.5 4.2(n)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.5.4.2(o)	7.2 2.1(j)	Conduct Frag Avoidance Manoeuvre

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7.5.5	Co	onduct Egress	
7.5.5.1	Pe	rform Formation	ı Rejoin
	7.5.5 1(a)	7.1.1 2(a)	Establish Radar Contact with Other Formation Members
	7.5 5.1(b)	7 1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7.5.5 1(c)	7.1.1.3(c)	Conduct Formation Join-up
	7.5.5.1(d)	7 1.1.2(f)	Establish Visual Contact with Other Formation Members
	7.5 5.1(e)	7 1.1.2(h)	Establish NVG Contact with Other Formation Members
7.5.5.2	Per	rform FLOT Cro	ssing Procedures
	7.5.5.2(a)	7 2.1.1(a)	Allow Aircraft Emmisions for Identification
	7.5.5.2(b)	7.2.3.2(b)	Egress at Low Altitude
	7.5.5.2(c)	7.2.3.2(c)	Egress at Medium/High Altitude
	7.5.5.2(d)	7.2 3.2(d)	Conduct Lame Duck Procedures
	7 5.5.2(e)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)
	7.5 5.2(f)	7 2.1 1(e)	Adjust to Medium/High Altitude (Permissive Environment)
7.5.6	Init	tiate Recovery/T	ransit to Follow on Tasking
7.5.6.1		s MISREP	
	7.5 6.1(a)	7.2.4.1(a)	Pass IFREP
7.5.6.2	Per	form Recovery C	Checks
	7.5.6.2(a)	7 2.4.2(a)	Conduct BD Check
	7.5.6.2(b)	7.2 4.2(b)	Conduct Fence Out Check
7.5.7	Esta	ablish and Maint	ain Formation
7.5.7.1		blish Tactical Fo	ormation
	7.5.7.1(a)	7.1.1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7 5.7 1(b)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen
	7.5.7.1(c)	7.2.5 1(c)	Execute Manoeuvre Turns
	7.5.7.1(d)	7 2.5.1(b)	Maintain Aircraft Control and Flight Position
	7.5.7 1(e)	7.2 5.2(f)	Communicate with Formation Members via Discreet frequency
	7.5.7.1(f)	7.2.5.2(g)	Communicate with Formation Members via Data Link
7.5.7.2		ntain Tactical Fo	rmation Integrity
	7.5.7.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation
	7.5.7.2(b)	7 2.5.2(b)	Maintain Visual Mutual Support
	7.5.7.2(c)	7 2.5 2(c)	Maintain Positional Mutual Support
	7.5.7.2(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7.5 7.2(e)	7.2.5.2(e)	Maintain Visual Mutual Support with NVG
7.5.8	Conc	luct Enroute Nav	vigation
7.5.8.1	Adhe	ere to Airspace C	fontrol Measures
	7.5.8 1(a)	7.2.6.1(a)	Maintain Ground Track
	7.5.8.1(b)	7.2.6.1(b)	Adhere to ACO
	7.5.8 1(c)	7.2 6.1(c)	Adjust G/S to Make Tasking Timings

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	7.5.8.1(d)	7.2.6.1(d)	Monitor and Avoid ACO Restricted Areas
7.5.8.2	Co	nduct System/Vis	ual Navigation
	7.5 8.2(a)	7.2 6.2(a)	Navigate Using Visual References
	7.5.8.2(b)	7 2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs
	7 5.8.2(c)	7 2.6.2(c)	Perform Navigation Systems Designations/Updates
	7.5.8.2(d)	7 2.6.2(d)	Employ Watch Map Ground Technique
	7.5.8.2(e)	7.2.6.2(e)	Arrive at Target at Predetermined TOT
	7.5.8.2(f)	7 2.6.2(f)	Navigate Using NVG Visual References
7.5.8.3	Ave	oid Hazards	
	7.5.8.3(a)	7.2.6.3(a)	Monitor and Avoid Weather
	7.5 8.3(b)	7.2.6.3(b)	Monitor and Avoid Obstacles
	7.5.8.3(c)	7.2.6 3(c)	Monitor and Avoid Terrain
	7.5.8.3(d)	7 2.6.3(e)	Monitor and Avoid Other Aircraft
7.5.9	Co	nduct Sensors Sea	arch and Visual Look Out
7.5.9.1	Cor	nduct Radar Sear	ch and Surveillance
	7.5.9.1(a)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns
	7.5.9 1(b)	7.2.7 1(e)	Advise on Radar Acquired Unknowns
	7 5.9.1(c)	7 2.7.1(f)	Radar Sort Multiple Unknown Contacts
	7.5.9.1(d)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters
	7.5.9.1(e)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members
	7.5.9.1(f)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements
	7.5.9.1(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays
	7.5.9.1(h)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF
7.5.9.2	Сог	nduct AMIRS Sea	arch and Surveillance
	7.5.9.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters
	7.5.9.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Members
	7.5.9.2(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elemer
	7.5.9.2(d)	7.2 7.2(g)	Interrogate Unknown AMIRS Contacts with IFF
	7.5.9.2(e)	7.2 7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns
	7 5.9 2(f)	7.2 7.2(e)	Advise on AMIRS Acquired Unknowns
	7.5.9.2(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS
7.5.9.3	Cor	nduct Visual Sear	ch and Surveillance
	7.5.9.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns
	7.5.9.3(b)	7.2 7.3(b)	Monitor and Maintain Visual Contact with Formation Members
	7.5.9.3(c)	7 2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Element
	7.5 9.3(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns
	7.5.9.3(e)	7.2.7.3(e)	Advise on Visually Acquired Unknowns
	7.5.9.3(f)	7.2.7.3(f)	Maintain NVG V1sual Search Patterns

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	7.5.9.3(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members
	7 5.9.3(h)	7.2 7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements
	7 5.9.3(1)	7 2.7.3(i)	Monitor and Maintain NVG Contact with Unknowns
7.6	Con	duct Air-to-Air R	efueling
7.6.1	Trai	isit to AAR Area	
7.6.1.1		blish Tactical Fo	
	7.6.1 1(a)	7.2.5 1(a)	Establish Tactical Roles - Tactical Leads and Wingmen
	7.6 1.1(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position
	7.6.1.1(c)	7 2.5.1(c)	Execute Manoeuvre Turns
7.6.1.2			rmation Integrity
	7.6.1.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation
	7.6 1.2(b)	7.2.5.2(b)	Maintain Visual Mutual Support
	7.6.1.2(c)	7.2.5.2(c)	Maintain Positional Mutual Support
	7.6.1 2(d)	7 2.5.2(e)	Maintain Visual Mutual Support with NVG
7.6.1.3	Adh	ere to Air Space (Control Measures
	7 6.1 3(a)	7.2.6.1(a)	Maintain Ground Track
	7.6.1 3(b)	7.2.6.1(b)	Adhere to ACO
	7.6.1.3(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings
	7 6.1.3(d)	7 2.6.1(d)	Monitor and Avoid ACO Restricted Areas
7.6.1.4	Conc	luct System/Visu	al Navigation
	7.6.1.4(a)	7 2.6.2(a)	Navigate Using Visual References
	7.6.1 4(b)	7.2.6 2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs
	7.6.1.4(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates
	7.6.1.4(d)	7.2.6.2(d)	Employ Watch Map Ground Technique
	7 6.1.4(e)	7 2.6.2(e)	Arrive at Target at Predetermined TOT
	7.6.1.4(f)	7.2.6 2(f)	Navigate Using NVG Visual References
7.6.1.5	Avoi	d Hazards	
	7.6.1.5(a)	7.2.6.3(a)	Monitor and Avoid Weather
	7.6.1 5(b)	7.2.6.3(b)	Monitor and Avoid Obstacles
	7.6.1.5(c)	7.2.6.3(c)	Monitor and Avoid Terrain
7.6.1.6	Cond	luct Radar Searc	h and Surveillance
	7 6.1 6(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters
	7.6.1.6(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members
	7.6 1.6(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements
	7.6 1.6(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns
	7.6 1.6(e)	7.2 7.1(e)	Advise on Radar Acquired Unknowns
	7.6.1.6(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts
	7.6.1.6(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays
	7.6 1.6(h)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF

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7.6.1.7	Co	nduct AMIRS Se	arch and Surveillance
	7.6.1.7(a)	7.2 7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters
	7.6 1.7(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Members
7.6.1.8	Co	nduct Visual Sea	rch and Surveillance
	7.6.1.8(a)	7.2.7.3(a)	Maintain Visual Search Patterns
	7.6.1.8(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members
	7.6.1 8(c)	7 2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Element
	7.6.1.8(d)	7 2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns
	7.6.1.8(e)	7.2.7.3(e)	Advise on Visually Acquired Unknowns
	7.6.1.8(f)	7.2.7.3(f)	Maintain NVG Visual Search Patterns
	7.6.1.8(g)	7 2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members
	7.6.1.8(h)	7 2 7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements
	7.6.1 8(i)	7.2.7.3(1)	Monitor and Maintain NVG Contact with Unknowns
7.6.2	Co	nduct Approach	to Contact
7.6.2.1		ablish Closure	
	7.6.2.1(a)	7.6.2.1(a)	Generate Positive Closure
	7.6.2 1(b)	7.6.2.1(b)	Maintain Positive Closure
	7.6.2.1(c)	7.6.2.1(c)	Monitor and Obey AAR Lights
7.6.2.2		ablish Attitude R	
	7.6.22(a)	7 6.2.2(a)	Position Pitch Ladders
	7.6.2.2(b)	7.6.2.2(b)	Align Probe
	7.6.2.2(c)	7.6.2 1(c)	Monitor and Obey AAR Lights
7.6.2.3		ve in to Contact	
	7.6.2.3(a)	7 6.2.3(a)	Pick Approach Reference
	7 6.2.3(b)	7.6.2.3(b)	Maintain Attitude References
	7.6.2.3(c)	$7.6.2 \ 3(c)$	Make Contact
7.6.3	7.6.2 3(d)	7.6 2.1(c)	Monitor and Obey AAR Lights
7.6.3.1		nduct Refueling ablish Maximum	Offload Bata
100011	7.6.3.1(a)	7.6.3.1(a)	Generate Maximum Fuel Transfer
	7.6.3.1(b)	7.6.2.1(c)	Monitor and Obey AAR Lights
7.6.3.2	Mai	ntain Contact	
	7.6.3 2(a)	7.6 3.1(a)	Maintain Hose in Trail Position
	7.6.3.2(b)	7.6.2.3(c)	Maintain Probe Contact
	7.6 3.2(c)	7 6.2.1(c)	Monitor and Obey AAR Lights
7.6.3.3	Con	duct Disconnect	
	7 6.3.3(a)	7.6.3.3(a)	Generate Negative Closure
	7 6.3.3(b)	7.6.2.3(b)	Maintain Attitude References
	7.6.3 3(c)	7.6.3.3(c)	Move to Astern Position

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	7.6.3.3(d)	7.6.2.1(c)	Monitor and Obey AAR Lights
	7.6.3.3(e)	7.6.3.3(e)	Move to Outboard / Echelon Position
7.6.4	Initi	ate Recovery/Tr	ansit to Follow on Tasking
7.6.4.1	Dep	art Tanker	
	7.6 4.1(a)	7.6.4 1(a)	Establish Departure Echelon Position
	7 6.4.1(b)	7.6.4.1(b)	Request Clearance to Depart
	7.6 4.1(c)	7.6.4.1(c)	Depart
7.6.4.2	Esta	blish Tactical Fo	ormation
	7.6.4 2(a)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen
	7.6 4.2(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position
	7.6.4.2(c)	7.2.5.1(c)	Execute Manoeuvre Turns
	7.6 4.2(d)	7 1.1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
7.6.4.3	Mai	ntain Tactical Fo	ormation Integrity
	7.6 4.3(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation
	7.6.4.3(b)	7.2.5.2(b)	Maintain Visual Mutual Support
	7.6.4.3(c)	7 2.5.2(c)	Maintain Positional Mutual Support
	7.6.4.3(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays
	7 6.4 3(e)	7.2.5.2(e)	Maintain Visual Mutual Support with NVG
7.6.4.4	Adh	ere to Air Space	Control Measures
	7.6.4 4(a)	7.2.6.1(a)	Maintain Ground Track
	7.6 4.4(b)	7 2.6.1(b)	Adhere to ACO
	7.6.4.4(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings
	7.6.4.4(d)	7.2.6 1(d)	Monitor and Avoid ACO Restricted Areas
7.6.4.5	Cone	duct System/Visi	al Navigation
	7.6.4.5(a)	7.2.6.2(a)	Navigate Using Visual References
	7.6.4.5(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs
	7.6.4.5(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates
	7.6.4.5(d)	7.2.6.2(d)	Employ Watch Map Ground Technique
	7.6.4.5(e)	7.2.6 2(e)	Arrive at Target at Predetermined TOT
	7 6.4 5(f)	7.2.6.2(f)	Navigate Using NVG Visual References
7.6.4.6	Avoi	d Hazards	
	7.6.4.6(a)	7.2 6.3(a)	Monitor and Avoid Weather
	7 6.4.6(b)	7.2.6.3(b)	Monitor and Avoid Obstacles
	7 6 4.6(c)	7.2 6.3(c)	Monitor and Avoid Terrain
	7.6.4.6(d)	7.2.6.3(e)	Monitor and Avoid Other Aircraft
7.6.4.7		duct Radar Sear	ch and Surveillance
	7.6.4.7(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters
	7.6.4.7(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members
	7.6 4.7(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements

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	7.6.4.7(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns
	7.6.4.7(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns
	7.6.4 7(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts
	7.6 4.7(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays
	7.6.4.7(h)	7.2 7.1(g)	Interrogate Unknown Radar Contacts with IFF
7.6.4.8			rch and Surveillance
	7.6.4.8(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters
	7.6.4 8(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Members
	7.6.4.8(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elemer
	7.6.4.8(d)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF
	7.6.4 8(e)	7.2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns
	7.6 4.8(f)	7.2.7.2(e)	Advise on AMIRS Acquired Unknowns
	7.6 4.8(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS
7.6.4.9	Cor	duct Visual Sear	ch and Surveillance
	7 6.4.9(a)	7.2.7.3(a)	Maintain Visual Search Patterns
	7.6.4.9(b)	7.2 7.3(b)	Monitor and Maintain Visual Contact with Formation Members
	7.6.4.9(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Element
	7 6.4.9(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns
	7.6 4.9(e)	7.2 7.3(e)	Advise on Visually Acquired Unknowns
	7.6.4.9(f)	7.2.7.3(f)	Maintain NVG Visual Search Patterns
	7 6.4.9(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members
	7.6.4.9(h)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements
	7.6.4.9(1)	7.2.7.3(i)	Monitor and Maintain NVG Contact with Unknowns
7.7	Rea	ict to Threats	
7.7.1	Det	ect Enemy Air Tl	hreats
7.7.1.1	See	k Out Enemy Air	Threats
	7.7.1.1(a)	7 5.2.2(a)	Employ Radar Search Sort and Target Contract
	7.7.1.1(b)	7.4 2.1(a)	Conduct Visual Lookout
	7 7.1.1(c)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information
	7.7.1.1(d)	7.5.2.2(d)	EID Unknowns
	7.7.1 1(e)	7.5.2.2(e)	Advise on Approaching Threats
	7.7.1.1(f)	7.5.2.2(f)	Advise on Visually Acquired Threats
	7.7.1.1(g)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays
	7.7.1 1(h)	7.5.2.2(h)	VID Unknowns
	7.7.1.1(i)	7 4.2.2(a)	Employ LINK 16/MIDS Secure Communications
	7.7.1 1(j)	7.4.2.2(c)	Utilize C2 Directive and Descriptive Commentary
	7.7.1 1(k)	7.4.2.1(e)	Utilize Lateral Mission Element Tactical Information
	7.7.1.1(l)	7 5.2.2(1)	Employ AMIRS Search Sort and Target Contract

7.7.1 1(m)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF
7.7.1.1(n)	7.4.2 2(b)	Employ Have Quick II Secure Communications
7.7.1.1(o)	7.4.2.1(g)	Conduct Visual Lookout with NVG
7.7.1.1(p)	7 5.2.2(p)	VID Unknowns with NVG
Avo	id Enemy Air T	hreats
Avo	id Detection by	Enemy Air Threat
7.7.2.1(a)	7.7.2 1(a)	Manoeuvre the Tactical Formation
7.7.2.1(b)	7.7.2.1(b)	Avoid Illuminating of the Enemy Air RWR
7.7.2.1(c)	7.7.2 1(c)	Configure the Tactical Formation
7 7.2.1(d)	7.7.2.1(d)	Establish Diverging Paths
7.7.2.1(e)	7.7.2.1(e)	React Aggressively to Enemy Air Manoeuvre
7.7.2.1(f)	7.7.2.1(f)	Limit Exposure Using Terrain Masking
7.7.2.1(g)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information
7.7.2.1(h)	7 5.2 2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays
Deg	rade Enemy Air	craft Situational Awareness
7.7.2.2(a)	7.5.2.3(a)	Employ Tactical Deception
7.7.2 2(b)	7.5.2.3(b)	Dispense Chaff
7.7 2.2(c)	7.5.2 3(c)	Employ Jammers
7.7.2.2(d)	7.5.2.3(d)	Employ BVR Deception Tactics
Dece	oy Enemy Air T	hreat
7.7 2.3(a)	7.5 2.4(a)	Manoeuvre/Expose the Tactical Formation
772.3(b)	7.5 2.4(b)	Illuminate Enemy Air RWR
7.7.2.3(c)	7.5.2.4(c)	Enhance Enemy Air Radar Acquisition
7.7.2.3(d)	7.5.2.4(d)	Draw Enemy Aır Away
7.7 2 3(e)	7.5 2.4(e)	Negate Enemy Air Weapons Employment
Nega	ate Enemy Air T	[hreat
7.7.2 4(a)	7.5.2 5(a)	Deny Enemy Air Weapons Solution
7.7.2.4(b)	7.5.2.5(b)	Negate Enemy Air Weapons Employment
7.7.2.4(c)	7.5.2.5(c)	Employ Air-to-Air RMD
7.7.2.4(d)	7.5.2.5(d)	Employ Air-to-Aır IRMD
7.7.2.4(e)	7.5.2.5(e)	Employ AAGD
7.7.2.4(f)	7.5.2.5(f)	Egress Engagement Safely
7 7.2.4(g)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information
7 7.2.4(h)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays
Eng	age Enemy Air '	Threats
-	-	craft Situational Awareness
7.7.3.1(a)	7.5.2.3(a)	Employ Tactical Deception
7.7.3.1(b)	7.5.2.3(b)	Dispense Chaff
7.7.3.1(c)	7.5.2.3(c)	Employ Jammers
	7.7.1.1(n) 7.7.1.1(o) 7.7.1.1(o) 7.7.1.1(p) Avo Avo 7.7.2.1(a) 7.7.2.1(b) 7.7.2.1(c) 7.7.2.1(c) 7.7.2.1(c) 7.7.2.1(c) 7.7.2.1(f) 7.7.2.1(g) 7.7.2.1(g) 7.7.2.1(g) 7.7.2.2(c) 7.7.2.2(c) 7.7.2.2(c) 7.7.2.2(d) Dece 7.7.2.3(a) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.3(c) 7.7.2.4(c) 7.	7.7.1.1(n) 7.4.2 2(b) 7.7.1.1(o) 7.4.2.1(g) 7.7.1.1(p) 7 5.2.2(p) Avoid Enemy Air T Avoid Enemy Air T Avoid Enemy Air T Avoid Detection by 7.7.2.1(a) 7.7.2 1(a) 7.7.2.1(b) 7.7.2 1(c) 7.7.2.1(c) 7.5.2 3(c) 7.7.2.2(a) 7.5.2 3(a) 7.7.2.2(b) 7.5.2 3(c) 7.7.2.2(c) 7.5.2 3(c) 7.7.2.2(c) 7.5.2 3(c) 7.7.2.3(a) 7.5 2.4(c) 7.7.2.3(c) 7.5 2.4(c) 7.7.2.3(c) 7.5 2.5(c) 7.7.2.4(c) 7.5 2.5(c) 7.7.2.4(c) 7.5 2.5(c) 7.7.2.4(c) 7.5 2.5(c)

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	7.7.3.1(d)	7.5.2 3(d)	Employ BVR Deception Tactics
7.7.3.2		duct Air Interce	· · ·
	7.7.3.2(a)	7 5 2.6(a)	Manoeuvre Aircraft to Intercept Enemy
	7.7.3.2(b)	7.5.2.5(b)	Negate Enemy Air Weapons Employment
	7.7.3.2(c)	7.5 2.5(a)	Deny Enemy Air Weapons Solution
7.7.3.3	Dec	oy Enemy Air Th	ireat
	7.7.3.3(a)	7.5.2.4(a)	Manoeuvre/Expose the Tactical Formation
	7.7.3.3(b)	7.5.2.4(b)	Illuminate Enemy Air RWR
	7.7.3.3(c)	7.5.2.4(c)	Enhance Enemy Air Radar Acquisition
	7.7.3.3(d)	7.5.2.4(d)	Draw Enemy Air Away
	7.7.3.3(e)	7.5.2.4(e)	Negate Enemy Air Weapons Employment
7.7.3.5	Des	troy Enemy Air T	Fhreat
	7.7.3.5(a)	7.5.2.7(a)	Manoeuvre to a Weapons Engagement Zone
	7.7.3.5(b)	7.2.2.1(g)	Validate Weapons Solution Display
	7.7.3.5(c)	7.5.2.7(c)	Employ Weapons
	7.7.3.5(d)	7.5.2.7(d)	Maintain Post Attack Offensive
	7 7.3.5(e)	7.5.2.5(f)	Egress Engagement Safely
	7 7.3.5(f)	7.5.2.7(f)	Assess Post Merge ACM Options
	7.7 3.5(g)	7.5.2.7(g)	Monitor Weapon Fly Out
7.7.3.6	•	ate Enemy Air T	
	7.7 3.6(a)	7.5.2.5(a)	Deny Enemy Air Weapons Solution
	7.7.3.6(b)	7.5.2 5(b)	Negate Enemy Air Weapons Employment
	7.7.3.6(c)	7.5.2.5(c)	Employ Air-to-Air RMD
	7.7.3.6(d)	7.5.2.5(d)	Employ Aır-to-Air IRMD
	7.7 3.6(e)	7 5.2 5(e)	Employ AAGD
	7.7.3.6(f)	7.5.2.5(f)	Egress Engagement Safely
	7.7 3.6(g)	7 4.2.1(b)	Respond to displayed RWR Threat Emission Information
	7.7.3.6(h)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays
	7.7.3.6(1)	7.7.3.6(i)	Jettison External Stores
7.7.4		ect Enemy Surfac	
7.7.4.1	Seel 7.7.4.1(a)	Cout Enemy Sur 7.4.2.1(a)	face Threats Conduct Visual Lookout
	7.7.4.1(a) 7.7.4.1(b)	7.4.2.1(a) 7.4.2.1(b)	Respond to displayed RWR Threat Emission Information
	7.7.4.1(0) 7 7 4.1(c)	7.4.2.1(0) 7 5.2 2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays
	7.7.4.1(d)	7 5.2 2(g) 7.4.2.1(g)	Conduct Visual Lookout with NVG
	7.7.4.1(d) 7.7.4.1(e)	7.4.2.1(g) 7.5.2.2(f)	Advise on Visually Acquired SAM/AAA
7.7.5	• •		
7.7.5.1		id Enemy Surfac imise Exposure	C 1 m (413
	7.7.5 1(a)	7.7.5.1(a)	Employ High Speed Flight

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	7.7.5.1(b)	775.1(b)	Employ Low Speed Flight
	7.7.5.1(c)	7.7.5.1(c)	Avoid Threat Envelopes
	7.7.5.1(d)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
7.7.5.2	Emplo	by DEWS	
	7.7.5.2(a)	7 4 2.1(b)	Analyse displayed RWR Threat Emission Information
	7.7.5.2(b)	7.5.2.3(c)	Employ Jammers
	7.7 5.2(c)	7.5.2.3(b)	Dispense Chaff
7.7.5.3	Emple	oy Environment	
	7.7.5.3(a)	7.7.2.1(f)	Limit Exposure Using Terrain Masking
	7.7 5 3(b)	775.3(b)	Employ Atmospheric Phenomena
7.7.6		t Enemy Surface	e Threats
7.7.6.1	•	by DEWS	
	7.7.6.1(a)	7 5 2.3(c)	Employ Jammers
	7.7.6.1(b)	7.7.6.1(b)	Employ Defensive Counter Measures
7.7.6.2	Emplo	oy Environment	
	7.7.6.2(a)	7.7.2.1(f)	Limit Exposure Using Terrain Masking
	7.7.6.2(b)	7 7.5.3(b)	Employ Atmospheric Phenomena
7.7.6.3	Emplo	oy Surface Threa	at Counter Measures
	7.7.6.3(a)	7.7.6.3(a)	Employ Surface-to-Air RMD
	7.7.6.3(b)	7 7 6.3(b)	Employ Surface-to-Air IRMD
	7.7.6.3(c)	7.5.2.5(e)	Employ AAAD
	7.7.6.3(d)	7.7.3.6(i)	Jettison External Stores
7.7.6.4	Condu	uct Attack on Su	rface Threat
	7.7.6 4(a)	7.2.2.1(a)	Conduct A/G Check
	7.7.6.4(b)	7.2.2.1(b)	Identify Initial Point Visually
	7.7.6.4(c)	7.2.2.1(c)	Designate/Add Offset at Initial Point
	7.7 6 4(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters
	7.7.6.4(e)	7.2.2.1(b)	Identify Target/DMPI V1sually
	7.7.6 4(f)	7.2.2.1(f)	Conduct Element Split Attacks
	7.7.6.4(g)	7 2.2.1(g)	Validate Weapons Solution Display
	7.7.6.4(h)	7.2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)
	7.7.6.4(I)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre
	7.7.6.4(j)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre
	7.7.6.4(k)	7.2.2.1(k)	Conduct BDA
	7.7.6.4(1)	7 2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections
	7.7.6.4(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays
	7.7 6.4(n)	7 2 2.2(b)	Designate Target Position
	7.7.6 4(0)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors
	7 7.6.4(p)	7.2.2 2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16
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	7.7.6.4(q)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)
	7 7.6.4(r)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery
	7.7.6 4(s)	7 2.2.2(i)	Conduct Buddy-Lasing LGB Delivery
	7.7.6.4(t)	7.2 2.2(j)	Update Target Designation
	7.7 6 4(u)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre
	7.7.6.4(v)	7.2.2.1(n)	Search for Initial Point
	7.7.6.4(w)	7.2.2.1(o)	Search for Target
	7.7.6.4(x)	7 2.2.1(p)	Identify Initial Point with NVG
	7.7.6.4(y)	7.2.2.1(p)	Identify Target/DMPI with NVG
	7 7.6.4(z)	7.2.2.1(J)	Conduct Frag Avoidance Manoeuvre
7.8	Mor	nitor Communic	ations
7.8.1	Мог	nitor Tactical Fr	equencies
7.8.1.1			th Monitor Tactical Frequencies
	7 8.1.1(a)	781.1(a)	Monitor Common Secure Voice Frequencies
	7 8.1.1(b)	7.8.1.1(a)	Monitor Discreet Voice Frequencies
	7.8.1.1(c)	7.8.1.1(c)	Monitor Broadcast Frequencies
7.8.2	Mor	nitor ATC Frequ	iencies
7.8.2.1	Tasl	ks Associated wi	th Monitor ATC Frequencies
	7.8.2.1(a)	7.8.1.1(a)	Monitor Secure Voice Frequencies
	7.8.2.1(b)	7.8.1.1(a)	Monitor Broadcast Frequencies
	7 8.2.1(c)	7.8.1.1(c)	Monitor Broadcast Frequencies
7.8.3	Mor	nitor LINK 16/M	IIDS
7.8.3.1	Tasl	ks Associated wi	th Monitor Data Link
	7.8.3.1(b)	7.8.3.1(b)	Monitor Secure LINK 16 Frequencies
7.8.4	Mor	itor Guard Free	quencies
7.8.4.1	Tasł	ks Associated wi	th Monitor Guard Frequencies
	7.8 4.1(a)	7.8.1.1(a)	Monitor UHF Guard Frequency and Monitoring Mode
	7 8.4.1(b)	7 8.1.1(a)	Monitor AM/FM Guard Frequency and Monitoring Mode
7.9	Mor	nitor Aircraft Sy	stems
7.9.1	Mor	nitor and Manag	e Fuel System
7.9.1.1			th Monitor and Manage Fuel System
	7.9.1.1(a)	7.9.1.1(a)	Monitor and Manage Tank Pressurization and Vent System
	7.9.1.1(b)	7.9.1.1(b)	Monitor and Manage Fuel Quantity Indicating System
	7.9.1.1(c)	7.9.1.1(c)	Monitor and Manage Fuel Feed Transfer
	7.9.1.1(d)	7.9.1.1(d)	Monitor and Compare Fuel Flow Indications
	7.9.1.1(e)	7.9.1.1(e)	Monitor and Manage Feed Tank Level
	7.9.1.1(f)	7.9.1 1(f)	Monitor and Manage Fuel LO Indication
	7.9.1.1(g)	7.9.1.1(g)	Monitor and Manage Bingo Fuel
	7.9.1.1(h)	7.9.1.1(h)	Monitor and Manage Tactical Fuel
7.9.10	Mon	itor and Manag	e Nav / Ident Systems

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7.9.10.1	Task	s Associated with	Monitor and Manage Nav / Ident Systems
	7.9.10.1(a)	7.9.10.1(a)	Monitor and Manage EGI Equipment
	7.9.10.1(b)	7.9.10.1(b)	Monitor and Manage Navigation Aid Equipment
7.9.11	Moni	itor and Manage	Combat Systems
7.9.11.1	Task	s Associated with	Monitor and Manage Combat Systems
	7.9 11.1(a)	7 9 11.1(a)	Monitor and Manage Radar
	7.9 11.1(b)	7.9 11.1(b)	Monitor and Manage Jammers
	7 9.11.1(d)	7 9.11.1(d)	Monitor and Manage RWR
	7911.1(e)	7 9 11.1(e)	Monitor and Manage AN/ALE-47
	7911.1(f)	7.9.11.1(f)	Monitor and Manage IFF Interrogator/Transponder (CIT)
	7.9.11.1(g)	7.9.11.1(g)	Monitor and Manage LINK 16/MIDS
	7.9.11.1(1)	7.9.11.1(i)	Monitor and Manage Stores Management Set
	7.9.11.1(j)	7.9.11.1(J)	Monitor and Manage Weapons
	7.9.11.1(k)	7.9.11.1(k)	Monitor and Manage Have Quick II
	7 9.11.1(l)	7.9.11.1(1)	Monitor and Manage NVIS
7.9.12	Moni	itor and Manage	Lighting Systems
7.9.12.1	Task	s Associated with	Monitor and Manage Lighting Systems
	7.9.12.1(a)	7.9.12.1(a)	Monitor and Manage Standard Exterior Lighting
	7.9.12.1(b)	7.9.12.1(b)	Monitor and Manage Standard Interior Lighting
	7 9.12 1(c)	7.9.12.1(c)	Monitor and Manage NVG Modified Exterior Lighting
	7.9.12 1(d)	7.9.12.1(d)	Monitor and Manage NVG Modified Interior Lighting
7.9.13	Moni	itor and Manage	Landing System
7.9.13.1	Task	s Associated with	Monitor and Manage Landing System
	7.9.13.1(a)	7.9 13.1(a)	Monitor and Manage Landing Gear System
	7.9.13.1(b)	7.9.13.1(b)	Monitor and Manage Brake System
	7.9.13.1(c)	7.9.13.1(c)	Monitor and Manage Arresting Hook System
7.9.2	Moni	tor and Manage	Hydraulic System
7.9.2.1	Task	s Associated with	Monitor and Manage Hydraulic System
	7.9.2.1(a)	7.9.2.1(a)	Monitor Hydraulic 1 and 2 Pump Pressure Indicators and Reservoirs
	7 9 2.1(b)	7.9 2.1(b)	Monitor and Manage APU and Brake Accumulators
7.9.3	Moni	itor and Manage	Engines
7.9.3.1	Tasks	s Associated with	Monitor and Manage Engines
	7.9.3.1(a)	7.9.3.1(a)	Monitor and Manage Engine Performance
	7.9.3.1(b)	7.9.3.1(b)	Monitor and Manage Throttle Controls
	7.9.3.1(c)	7.9.3.1(c)	Monitor and Manage Engine Anti-Ice System
	7.9.3.1(d)	7.9.3.1(d)	Monitor and Manage Automatic Throttle Control (ATC)
	7.9.3.1(e)	7.9.3.1(e)	Monitor Inspection of Inlet Duct Doors
	7.9.3.1(f)	7.9 3.1(f)	Monitor and Manage Secondary Power Systems
7.9.4	Moni	itor and Manage	Electrical System
7.9.4.1	Tasks	s Associated with	Monitor and Manage Electrical System

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	794.1(a).	7 9.4.1(a).	Monitor and Manage Electrical Circuit Breakers
	7.9.4.1(b)	7.9.4.1(b)	Monitor and Manage Generators
	7.9.4.1(c)	7.9.4.1(c)	Monitor and Manage Transformer Rectifiers
	7.9.4.1(d)	7.9.4.1(d)	Monitor and Manage Batteries
7.9.5	Mor	nitor and Manag	e Flight Control System
7.9.5.1	Tasl	ks Associated wi	th Monitor and Manage Flight Control System
	7.9.5.1(a)	7.9.5.1(a)	Monitor and Manage Pilot Controls
	7.9.5.1(b)	7.9.5.1(b)	Monitor and Manage Primary Flight Controls
	7.9.5.1(c)	7 9.5 1(c)	Monitor and Manage Secondary Flight Controls
	7.9.5.1(d)	7 9.5.1(d)	Monitor and Manage FCS Status Display
	7.9 5.1(e)	7.9.5.1(e)	Monitor and Manage Departure Warning Tone
	7.9.5.1(f)	7.9.5.1(f)	Monitor and Manage Spin Recovery System
	7.9.5.1(g)	7.9.5.1(g)	Monitor and Manage Control Augmentation System
	7.9 5.1(h)	7.9.5.1(h)	Monitor and Manage Flight Control Computers (FCC)
	7.9.5.1(1)	7.9.5.1(i)	Monitor and Manage CAS Backup Systems
	7.9.5.1(J)	7.9.5.1(j)	Monitor and Manage Wing Fold System
	7.9.5.1(k)	7.9 5.1(k)	Monitor and Manage Automatic Flight Control System
7.9.6	Мог	nitor and Manag	ge Emergency Systems
7.9.6.1	Tasl	ks Associated wi	th Monitor and Manage Emergency Systems
	7.9.6.1(a)	7.9.6.1(a)	Monitor and Manage Warning/Caution/Advisory Lights and Display
	7.9.6.1(b)	7.9.6.1(b)	Monitor and Manage Master Caution Light and Tone
	7.9.6.1(c)	7961(c)	Monitor Voice Alert System
	7.9.6.1(d)	7.9.6.1(d)	Monitor and Manage GPWS
	7.9.6.1(e)	796.1(e)	Monitor and Manage Fire Detection/Extinguishing System
	7.9.6 1(f)	7.9.6.1(f)	Monitor and Manage Canopy System
	7.9.6.1(g)	7.9.6.1(g)	Monitor and Manage Ejection Seat System
	7.9.6.1(h)	7.9 6.1(h)	Monitor and Manage Life Support Systems
7.9.7	Мог	nitor and Manag	e Environmental Controls and Oxygen
7.9.7.1	Tasl	ks Associated wi	th Monitor and Manage Environmental Controls and Oxygen
	7.9.7.1(a)	7 9.7.1(a)	Monitor and Manage Bleed Air Systems
	7.9.7.1(b)	7.9.7.1(b)	Monitor and Manage Windshield Anti-Ice and Rain Removal Systen
	7.9.7.1(c)	7.9.7.1(c)	Monitor and Manage Avionics Cooling and Pressurization
	7.9.7.1(d)	7.9.7.1(d)	Monitor and Manage Cockpit Air-Conditioning and Pressurization
7.9.8	Мо	nitor and Manag	ge Flight Instruments
7.9.8.1	Tasl	ks Associated wi	th Monitor and Manage Flight Instruments
	7.9.8.1(a)	7.9.8.1(a)	Monitor and Manage Pitot Static System
	7 9.8.1(b)	7.9.8.1(b)	Monitor and Manage Standby Instruments
	7 9.8.1(c)	7.9.8 1(c)	Monitor and Manage Radar Altimeter
	7.9.8.1(d)	7.9.8 1(d)	Monitor and Manage AOA Indexer

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	7.9.8.1(e)	7 9.8.1(e)	Monitor and Manage Clock
7.9.9	Mon	itor and Manage	e Avionics Sub-Systems
7.9.9.1	Tasl	ks Associated wit	h Monitor and Manage Avionics Sub-Systems
	7.9.9.1(a)	7.9.9.1(a)	Monitor and Manage Mission Computer System
	7.9.9.1(b)	7.9 9.1(b)	Monitor and Manage Cockpit Controls and Displays
	7.9.9 l(c)	7 9.9.1(c)	Monitor and Manage UFC
	7.9.9.7(d)	7.9.9.7(d)	Monitor and Manage CVRS
	7.9.9.7(e)	7.9 9.7(e)	Monitor and Manage Digital Displays VRS

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Annex D

Goal Allocation Criteria and Weights

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Annex D - CF18 Air to Ground Goal Allocation Criteria and Weights

Boredom	0 012
Complexity	0 051
Computation	0 031
Concept of Ops	0 084
Data Measurement	0 035
Data Sensing	0 057
Dexterity Weight	0 029
Information Availability	0 055
Input Sensitivity	0 061
Intelligence	0 053
Memory	0 055
Mobility	0 011
Pattern Recognition	0 074
Power	0 013
Problem Solving	0 057
Reasoning	0 066
Reliability	0 051
Response Time	0 047
Situational Awareness	0 059
Technical Risk or Cost	0 027
Verbal Task	0 073

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Annex E

Goal Allocation

Annex E - CF18 Air to Ground Goal Allocation

Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 5 2 2(d)	Initiate and Monitor EID of Unknowns	-0 217	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7991(a)	Monitor and Manage Mission Computer System	-0 194	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
79101(a)	Monitor and Manage EGI Equipment	-0 182	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
795l(e)	Monitor and Manage Departure Warning Tone	-0 147	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
795l(f)	Monitor and Manage Spin Recovery System	-0 137	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
79111(f)	Monitor and Manage IFF Interrogator/Transponder (CIT)	-0 135	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
795l(c)	Monitor and Manage Secondary Flight Controls	-0 133	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
795l(b)	Monitor and Manage Primary Flight Controls	-0 133	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7951(h)	Monitor and Manage Flight Control Computers (FCC)	-0 133	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7211(a)	Reduce Aircraft Emissions (EMCON Procedures)	-0 132	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7961(a)	Monitor and Manage Warning/Caution/Advisory Lights and Displays	-0 129	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7971(d)	Monitor and Manage Cockpit Air- Conditioning and Pressurization	-0 123	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7961(e)	Monitor and Manage Fire Detection/Extinguishing System	-0 114	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 2 2 2(h)	Conduct Self-Lasing LGB Delivery	-0 108	Human		Mandatory

Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
796l(d)	Monitor and Manage GPWS	-0 108	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
796l(g)	Monitor and Manage Ejection Seat System	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 2 7 2(g)	Interrogate Unknown AMIRS Contacts with IFF	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
727l(g)	Interrogate Unknown Radar Contacts with IFF	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 2 2.2(J)	Update Target Designation	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 I 5 1(b)	Establish Radar Contact with AAR	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 1 4 2(1)	Establish AMIRS Contact with Naval Ships	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7112(g)	Establish AMIRS Contact with Other Mission Elements	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7112(a)	Establish Radar Contact with Other Mission Elements	-0 102	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7931(d)	Monitor and Manage Automatic Throttle Control (ATC)	-0 100	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7951(1)	Monitor and Manage CAS Backup Systems	-0 086	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7951(g)	Monitor and Manage Control Augmentation System	-0 086	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7951(d)	Monitor and Manage FCS Status Display	-0 086	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
791l(f)	Monitor and Manage Fuel LO Indication	-0 082	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 2 2 2(1)	Conduct Buddy-Lasıng LGB Delivery	-0 081	Human		Mandatory

Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
79111(g)	Monitor and Manage LINK 16/MIDS	-0 080	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7941(c)	Monitor and Manage Transformer Rectifiers	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7971(a)	Monitor and Manage Bleed Air Systems	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7921(a)	Monitor Hydraulic 1 and 2 Pump Pressure Indicators and Reservoirs	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
797l(b)	Monitor and Manage Windshield Anti-Ice and Rain Removal System	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7911(c)	Monitor and Manage Fuel Feed Transfer	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7971(c)	Monitor and Manage Avionics Cooling and Pressurization	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7931(f)	Monitor and Manage Secondary Power Systems	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7941(b)	Monitor and Manage Generators	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
794l(d)	Monitor and Manage Batteries	-0.078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7981(a)	Monitor and Manage Pitot Static System	-0 078	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
79111(k)	Monitor and Manage Have Quick []	-0 070	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7961(b)	Monitor and Manage Master Caution Light and Tone	-0 068	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 1 5 l(f)	Establish AMIRS Contact With AAR	-0 067	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7961(h)	Monitor and Manage Life Support Systems	-0 066	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7941(a)	Monitor and Manage Electrical Circuit Breakers	-0 066	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7961(f)	Monitor and Manage Canopy System	-0 055	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7991(c)	Monitor and Manage UFC	-0 051	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7981(d)	Monitor and Manage AOA Indexer	-0 049	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 5 2 2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	-0 049	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7921(b)	Monitor and Manage APU and Brake Accumulators	-0 047	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 9 9 7(d)	Monitor and Manage CVRS	-0 043	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7997(e)	Monitor and Manage Digital Displays VRS	-0 043	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7951(k)	Monitor and Manage Automatic Flight Control System	-0 043	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7831(b)	Monitor Secure LINK 16 Frequencies	-0 039	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
79131(b)	Monitor and Manage Brake System	-0 024	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
79131(c)	Monitor and Manage Arresting Hook System	-0 024	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
79111(d)	Monitor and Manage RWR	-0 024	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
793l(a)	Monitor and Manage Engine Performance	-0 008	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7911(a)	Monitor and Manage Tank Pressurization and Vent System	-0 004	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function

Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
79111(b)	Monitor and Manage Jammers	-0 002	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 7 2 1(f)	Limit Exposure Using Terrain Masking	0 000	Human		Mandatory
7 2 2 2(c)	Identify Target Area with Aircraft Sensors	0 000	Human		Mandatory
7751(b)	Employ Low Speed Flight	0 000	Human		Mandatory
7951(a)	Monitor and Manage Pilot Controls	0 000	Human		Mandatory
793.1(e)	Monitor Inspection of Inlet Duct Doors	0 000	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
793l(c)	Monitor and Manage Engine Anti- Ice System	0 000	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 3 2 2(c)	Find Target Visually	0 000	Human		Mandatory
7 5 2 7(c)	Employ Weapons	0 000	Human		Mandatory
7 2 2 2(g)	Deliver PGM (LGB/MAV/Adv PGM)	0 000	Human		Mandatory
7 5 2 5(a)	Deny Enemy Air Weapons Solution	0 000	Human		Mandatory
7 3 2 2(h)	Find Target with NVG	0 000	Human		Mandatory
793l(b)	Monitor and Manage Throttle Controls	0 000	Human		Mandatory
7 5 2 5(b)	Negate Enemy Air Weapons Employment	0 000	Human		Mandatory
7241(a)	Pass IFREP	0 000	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 5 2 2(p)	VID Unknowns with NVG	0 000	Human		Mandatory
7221(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)	0 000	Human		Mandatory
7 5 2 4(e)	Negate Enemy Air Weapons Employment	0 000	Human		Mandatory
7 5 2 2(f)	Advise on Visually Acquired Threats	0 000	Human		Mandatory
7 2 2 2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	0 000	Human		Mandatory
7951(j)	Monitor and Manage Wing Fold System	0 000	Machine	Human	Re-Allocated by Analyst to reflect Human Role in monitoring the machine function
7 5 2 2(h)	VID Unknowns	0 000	Human		Mandatory
79111(1)	Monitor and Manage Stores Management Set	0 002	Human		Weighted Sum
732l(e)	Communicate with FAC via DATA LINK 16	0 01 1	Human		Weighted Sum
79131(a)	Monitor and Manage Landing Gear System	0 01 1	Human		Weighted Sum
7 1 4 2(f)	Deploy to CAP	0 016	Human		Weighted Sum
7 1 4 2(e)	Establish Radar Contact with Naval Ships	0.023	Human		Weighted Sum
7911(b)	Monitor and Manage Fuel Quantity Indicating System	0 023	Human		Weighted Sum
7 2 2 1(c)	Designate/Add Offset at Initial Point	0 025	Human		Weighted Sum
7991(b)	Monitor and Manage Cockpit Controls and Displays	0 028	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
79111(j)	Monitor and Manage Weapons	0 029	Human		Weighted Sum
7262(c)	Perform Navigation Systems Designations/Updates	0 033	Human		Weighted Sum
7961(c)	Monitor Voice Alert System	0 034	Human		Weighted Sum
7 I 5 1(g)	Establish NVG Contact with AAR	0 037	Human		Weighted Sum
79111(1)	Monitor and Manage NVIS	0 039	Human		Weighted Sum
7911(e)	Monitor and Manage Feed Tank Level	0 043	Human		Weighted Sum
7 5 2 4(b)	Illuminate Enemy Air RWR	0 043	Human		Weighted Sum
7 2 3 2(b)	Egress at Low Altitude	0 051	Human		Weighted Sum
7 2 3 2(c)	Egress at Medium/High Altitude	0 051	Human		Weighted Sum
79111(a)	Monitor and Manage Radar	0 052	Human		Weighted Sum
7981(e)	Monitor and Manage Clock	0 059	Human		Weighted Sum
79111(e)	Monitor and Manage AN/ALE-47	0 069	Human		Weighted Sum
7641(b)	Request Clearance to Depart	0 073	Human		Weighted Sum
7911(d)	Monitor and Compare Fuel Flow Indications	0 074	Human		Weighted Sum
7621(b)	Maintain Positive Closure	0 075	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 6 2 1(a)	Generate Positive Closure	0 075	Human		Weighted Sum
7 4 2 2(a)	Report Target via LINK 16/MIDS Secure Communications	0 076	Human		Weighted Sum
79121(d)	Monitor and Manage NVG Modified Interior Lighting	0 081	Human		Weighted Sum
79121(c)	Monitor and Manage NVG Modified Exterior Lighting	0 081	Human		Weighted Sum
7 9 10 l(b)	Monitor and Manage Navigation Aid Equipment	0 082	Human		Weighted Sum
7421(c)	Acquire Enemy Targets on LINK 16/MIDS Displays	0 082	Human		Weighted Sum
7 1 1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	0 083	Human		Weighted Sum
7 1 4 2(l)	Establish NVG Contact with Naval Ships	0 084	Human		Weighted Sum
7 l l 2(h)	Establish NVG Contact with Other Mission Elements	0 084	Human		Weighted Sum
7981(b)	Monitor and Manage Standby Instruments	0 085	Human		Weighted Sum
79121(a)	Monitor and Manage Standard Exterior Lighting	0 085	Human		Weighted Sum
7 9 12 1(b)	Monitor and Manage Standard Interior Lighting	0 085	Human		Weighted Sum
763l(a)	Generate Maximum Fuel Transfer	0 090	Human		Weighted Sum
7981(c)	Monitor and Manage Radar Altimeter	0 092	Human		Weighted Sum
7 2 7 1(f)	Radar Sort Multiple Unknown Contacts	0 095	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 2 7 2(f)	Sort Multiple Unknown Contacts with AMIRS	0 095	Human		Weighted Sum
7 3 2 1(c)	Enter Target Location in Aircraft database	0 099	Human		Weighted Sum
7 l l l(b)	Conduct TRP Hold	0 102	Human		Weighted Sum
7 2 l 1(b)	Ingress at Low Altitude (Sophisticated Environment)	0 102	Human		Weighted Sum
7211(c)	Ingress at Medium/High Altitude (Permissive Environment)	0 102	Human		Weighted Sum
7211(d)	Descend to Low Altitude (Sophisticated Environment)	0 102	Human		Weighted Sum
7211(e)	Adjust to Medium/High Altitude (Permissive Environment)	0 102	Human		Weighted Sum
7811(a)	Monitor Common Secure Voice Frequencies	0 108	Human		Weighted Sum
7 l 5 l(c)	Establish Communications with AAR	0116	Human		Weighted Sum
7 1 1 2(b)	Establish Communications with Other Mission Elements	0 116	Human		Weighted Sum
7 l l 2(c)	Establish Communications with Controlling Agency	0 116	Human		Weighted Sum
7 5 2 4(c)	Enhance Enemy Aır Radar Acquisition	0 117	Human		Weighted Sum
7 2 7 2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	0 121	Human		Weighted Sum
7 1 1 2(e)	Confirm Friendly Force and Adversary Disposition on LINK 16/MIDS	0 121	Human		Weighted Sum
7 3 2 2(f)	Conduct Target Run In	0 124	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale	
7 2 2 1(k)	Conduct BDA	0 125	Human		Weighted Sum	
7 1 5 2(a)	Conduct AAR Sensors to Visual Intercept	0 130	Human		Weighted Sum	
775l(a)	Employ High Speed Flight	0 136	Human		Weighted Sum	
7 6 3 3(a)	Generate Negative Closure	0 139	Human		Weighted Sum	
7221(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays	0 139	Human		Weighted Sum	
7 1 1 2(f)	Establish Visual Contact with Other Mission Elements	0 141	Human		Weighted Sum	
7 l 5 l(e)	Establish Visual Contact with AAR	0 141	Human		Weighted Sum	
7 I 4 2(g)	Establish Visual Contact with Naval Ships	0 141	Human		Weighted Sum	
722l(g)	Valıdate Weapons Solution Display	0 143	Human		Weighted Sum	
7 2 7 1(b)	Monitor and Maintain Radar Contact with Formation Members	0 146	Human		Weighted Sum	
7 2 7 2(b)	Monitor and Maintain AMIRS Contact with Formation Members	0 146	Human		Weighted Sum	
7271(d)	Monitor and Maintain Radar Contact with Unknowns	0 146	Human		Weighted Sum	
727l(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements	0 146	Human		Weighted Sum	
7 2 7 2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elements	0 146	Human		Weighted Sum	
7 2 7 2(d)	Monitor and Maintain AMIRS Contact with Unknowns	0 146	Human		Weighted Sum	

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 7 2 1(b)	Avoid Illuminating of the Enemy Air RWR	0 148	Human		Weighted Sum
7 4 2 2(b)	Report Target via Have Quick II Secure Communications	0 149	Human		Weighted Sum
7 3 2 2(d)	Communicate Target Acquired	0 157	Human		Weighted Sum
7 1 1 3(c)	Conduct Formation Join-up	0 159	Human		Weighted Sum
7 3.2 2(a)	Receive Target Description Brief from FAC	0 159	Human		Weighted Sum
7 2 7 2(e)	Advise on AMIRS Acquired Unknowns	0 159	Human		Weighted Sum
7 2 7 3(e)	Advise on Visually Acquired Unknowns	0 159	Human		Weighted Sum
727l(e)	Advise on Radar Acquired Unknowns	0 159	Human		Weighted Sum
7 2 2 1(d)	Manoeuvre to Weapons Delivery Parameters	0 163	Human		Weighted Sum
7111(a)	Identify TRP	0 167	Human		Weighted Sum
7 2 7 l(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters	0 168	Human		Weighted Sum
7 2 3 2(d)	Conduct Lame Duck Procedures	0 168	Human		Weighted Sum
7 6 2 2(a)	Position Pitch Ladders	0 172	Human		Weighted Sum
7 1 5 2(f)	Conduct AAR Sensors to NVG Intercept	0 181	Human		Weighted Sum
7 5 2 5(c)	Employ Aır-to-Aır RMD	0 182	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 6 3 3(c)	Move to Astern Position	0 183	Human		Weighted Sum
7 6 3 3(e)	Move to Outboard / Echelon Position	0 183	Human		Weighted Sum
7641(a)	Establish Departure Echelon Position	0 183	Human		Weighted Sum
7623(c)	Make Contact	0 183	Human		Weighted Sum
7 6 2 2(b)	Alıgn Probe	0 183	Human		Weighted Sum
732l(a)	Copy Target Brief from FAC	0 183	Human		Weighted Sum
7321(b)	Read Back Mandatory Items to FAC	0 184	Human		Weighted Sum
7641(c)	Depart	0 185	Human		Weighted Sum
7621(c)	Monitor and Obey AAR Lights	0 185	Human		Weighted Sum
7 1 1 1(c)	Search for TRP	0 185	Human		Weighted Sum
7 2 2 1(f)	Conduct Element Split Attacks	0 186	Human		Weighted Sum
7 1 4 1(f)	Confirm Positive Radar Identification by Naval Controlling Agency	0 189	Human		Weighted Sum
7623(a)	Pick Approach Reference	0 196	Human		Weighted Sum
726l(d)	Monitor and Avoid ACO Restricted Areas	0 203	Human		Weighted Sum
7261(b)	Adhere to ACO	0 203	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 2 4 2(b)	Conduct Fence Out Check	0 207	Human		Weighted Sum
7 2 6 2(f)	Navigate Using NVG Visual References	0 212	Human		Weighted Sum
7271(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	0 213	Human		Weighted Sum
7811(c)	Monitor Broadcast Frequencies	0 218	Human		Weighted Sum
7721(d)	Establish Diverging Paths	0 220	Human		Weighted Sum
7 6 2 3(b)	Maintain Attitude References	0 227	Human		Weighted Sum
7421(e)	Utilize Lateral Mission Element Tactical Information	0 233	Human		Weighted Sum
7 2 7 3(f)	Maintain NVG Visual Search Patterns	0.234	Human		Weighted Sum
7421(f)	Find Target with AMIRS Search Sort and Target Contract	0 234	Human		Weighted Sum
7 5 2 7(g)	Monitor Weapon Fly Out	0 236	Human		Weighted Sum
7763(a)	Employ Surface-to-Air RMD	0 237	Human		Weighted Sum
7 1 5 1(d)	Conduct Pre AAR RV Checks	0 238	Human		Weighted Sum
7 1 5 2(e)	Conduct Pre-Contact AAR Checks	0 238	Human		Weighted Sum
7 2 2 2(b)	Designate Target Position	0 239	Human		Weighted Sum
7 2 2 1(l)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections	0 239	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 2 4 2(a)	Conduct BD Check	0 241	Human		Weighted Sum
7 2 2 1(a)	Conduct A/G Check	0 242	Human		Weighted Sum
7 1 2 1(e)	Get Initial Target Brief	0 246	Human		Weighted Sum
7 2 6 2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs	0 251	Human		Weighted Sum
7 1 5 2(b)	Adopt AAR Towline Waiting Position	0 258	Human		Weighted Sum
7 1 5 2(c)	Join In Echelon Position	0 258	Human		Weighted Sum
7 1 5 2(d)	Position Astern AAR Hoses	0 258	Human		Weighted Sum
7261(c)	Adjust G/S to Make Tasking Timings	0.259	Human		Weighted Sum
7261(a)	Maintain Ground Track	0 262	Human		Weighted Sum
7221(n)	Search for Initial Point	0 262	Human		Weighted Sum
7221(0)	Search for Target	0 262	Human		Weighted Sum
7251(a)	Establish Tactical Roles - Tactical Leads and Wingmen	0.267	Human		Weighted Sum
7 3 2 2(b)	Find Target Using Sensors	0 267	Human		Weighted Sum
7 l 4 l(c)	Conduct Weapons Check-In with Controlling Agency	0 273	Human		Weighted Sum
7 2.6 2(e)	Arrive at Target at Predetermined TOT	0 276	Human		Weighted Sum

Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 2 5 2(a)	Optimize Formation for Tactical Situation	0 277	Human		Weighted Sum
7523(c)	Employ Jammers	0 278	Human		Weighted Sum
7221(p)	Identify Initial Point with NVG	0 280	Human		Weighted Sum
7 2 2 1(b)	Identify Initial Point Visually	0 280	Human		Weighted Sum
7 2 7 3(a)	Maintain Visual Search Patterns	0 291	Human		Weighted Sum
7 2 5 2(b)	Maintain Visual Mutual Support	0 291	Human		Weighted Sum
7421(d)	Find Target with Radar Search Sort and Target Contract	0 291	Human		Weighted Sum
7 3 2 2(e)	Describe Target Area and Target to FAC	0 292	Human		Weighted Sum
7 2 2 1(j)	Conduct Frag Avoidance Manoeuvre	0 296	Human		Weighted Sum
7221(1)	Conduct Safe Escape Manoeuvre	0 296	Human		Weighted Sum
7721(e)	React Aggressively to Enemy Air Manoeuvre	0 298	Human		Weighted Sum
7 2 6 2(d)	Employ Watch Map Ground Technique	0 299	Human		Weighted Sum
7 2 5 2(c)	Maintain Positional Mutual Support	0 309	Human		Weighted Sum
7 2 5 2(g)	Communicate with Formation Members via Data Link	0 315	Human		Weighted Sum
7 2 5 2(e)	Maintain Visual Mutual Support with NVG	0 318	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 I I 2(d)	Get Tactical Update and Area Brief	0 320	Human		Weighted Sum
7911(g)	Monitor and Manage Bingo Fuel	0 320	Human		Weighted Sum
7 5 2 5(e)	Employ AAGD	0 321	Human		Weighted Sum
7751(c)	Avoid Threat Envelopes	0 330	Human		Weighted Sum
7421(g)	Conduct Visual Lookout with NVG	0 343	Human		Weighted Sum
7 5 2 3(b)	Dispense Chaff	0 344	Human		Weighted Sum
7 2 7 3(g)	Monitor and Maintain NVG Contact with Formation Members	0.347	Human		Weighted Sum
7 2 7 3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements	0 347	Human		Weighted Sum
7 2 7 3(1)	Monitor and Maintain NVG Contact with Unknowns	0 347	Human		Weighted Sum
7421(a)	Conduct Visual Lookout	0 347	Human		Weighted Sum
7 4 2 1(b)	Respond to displayed RWR Threat Emission Information	0 355	Human		Weighted Sum
7 5 2 6(a)	Manoeuvre Aircraft to Intercept Enemy	0 357	Human		Weighted Sum
7 2 5 I(b)	Maintain Aircraft Control and Flight Position	0 369	Human		Weighted Sum
7 5 2 7(a)	Manoeuvre to a Weapons Engagement Zone	0 377	Human		Weighted Sum
7761(b)	Employ Defensive Counter Measures	0 377	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 7 5 3(b)	Employ Atmospheric Phenomena	0 386	Human		Weighted Sum
7 2 6 2(a)	Navigate Using Visual References	0 394	Human		Weighted Sum
7251(c)	Execute Manoeuvre Turns	0 400	Human		Weighted Sum
7 2 7 3(d)	Monitor and Maintain Visual Contact with Unknowns	0 404	Human		Weighted Sum
7 2 7 3(b)	Monitor and Maintain Visual Contact with Formation Members	0 404	Human		Weighted Sum
7 2 7 3(c)	Monitor and Maintain Visual Contact with Lateral Mission Elements	0 404	Human		Weighted Sum
7 2 5 2(f)	Communicate with Formation Members via Discreet Frequency	0 406	Human		Weighted Sum
7 5 2 5(d)	Employ Aır-to-Aır IRMD	0 423	Human		Weighted Sum
7 7 6 3(b)	Employ Surface-to-Air IRMD	0 423	Human		Weighted Sum
7 2 6 3(c)	Monitor and Avoid Terrain	0 426	Human		Weighted Sum
7 5 2 4(a)	Manoeuvre/Expose the Tactical Formation	0 436	Human		Weighted Sum
7736(1)	Jettison External Stores	0 452	Human		Weighted Sum
7721(a)	Manoeuvre the Tactical Formation	0 463	Human		Weighted Sum
772l(c)	Configure the Tactical Formation	0 463	Human		Weighted Sum
7 5 2 2(a)	Employ Radar Search Sort and Target Contract	0 466	Human		Weighted Sum

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Goal ID	Goal Label	Weighted Sum	Allocation	Qualitative Allocation	Rationale
7 5 2 2(1)	Employ AMIRS Search Sort and Target Contract	0 466	Human		Weighted Sum
7 5 2 3(a)	Employ Tactical Deception	0 509	Human		Weighted Sum
7 5 2 5(f)	Egress Engagement Safely	0 51 1	Human		Weighted Sum
7 5 2 7(d)	Maintain Post Attack Offensive	0 511	Human		Weighted Sum
7 5 2 3(d)	Employ BVR Deception Tactics	0 511	Human		Weighted Sum
7 5 2 4(d)	Draw Enemy Air Away	0 511	Human		Weighted Sum
7521(b)	Conduct CAP	0 522	Human		Weighted Sum
7 5 2 7(f)	Assess Post Merge ACM Options	0 548	Human		Weighted Sum
7 5 2 2(e)	Advise on Approaching Threats	0 550	Human		Weighted Sum
7 4 2 2(c)	Utilize C2 Directive and Descriptive Commentary	0 558	Human		Weighted Sum
7 2 6 3(a)	Monitor and Avoid Weather	0 563	Human		Weighted Sum
7 2 6 3(b)	Monitor and Avoid Obstacles	0 563	Human		Weighted Sum
7 2 6 3(e)	Monitor and Avoid Other Aircraft	0 563	Human		Weighted Sum
7911(h)	Monitor and Manage Tactical Fuel	0 622	Human		Weighted Sum

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Annex F

Goal Inventory with Completion Times

CR 2001-072

Goal ID	Source Goal	Goal Label (Goal Completion Time (s)
7.1 1 1(a)	7.1.1.1(a)	Identify TRP	10
7.1.1.1(b)	7.1.1.1(b)	Conduct TRP Hold	300
7.1 1 1(c)	7.1.1.1(c)	Search for TRP	20
7 1.1.2(a)	7.1.1.2(a)	Establish Radar Contact with Other Mission Elements	20
7.1.1.2(b)	7 1 1.2(b)	Establish Communications with Other Mission Elements	12
7.1.1.2(c)	7.1.1.2(c)	Establish Communications with Controlling Agency	15
7.1.1.2(d)	7.1.1.2(d)	Get Tactical Update and Area Brief	15
7.1 1.2(e)	7.1.1.2(e)	Confirm Friendly Force and Adversary Disposition on LINK 16/	/MI 10
7.1.1.2(f)	7.1.1.2(f)	Establish Visual Contact with Other Mission Elements	10
7.1.1.2(g)	7.1.1.2(g)	Establish AMIRS Contact with Other Mission Elements	10
7 l l.2(h)	7 1.1.2(h)	Establish NVG Contact with Other Mission Elements	10
7 1.1.3(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members	20
7 1 1 3(b)	7 1.1.2(b)	Establish Communications with Other Formation Members	12
7.1.1.3(c)	7.1.1.3(c)	Conduct Formation Join-up	60
7.1.1.3(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Display	7S 5
7.1.1.3(e)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	10
7.1.1.3(f)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members	10
7 1.1.3(g)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	10
7 1.1.3(h)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7 1.2 1(a)	7 1.1.2(a)	Establish Radar Contact with Other Mission Elements	20
7.1.2.1(b)	7.1.1.2(c)	Establish Communications with Controlling Agency (ABCCC/A	WA 15
7.1.2.1(c)	7.1.1.2(b)	Establish Communications with Forward Air Controller (FAC)	12
7.1.2.1(d)	7.1.1.2(d)	Get Tactical Update and Area Brief	15
7.1.2.1(e)	7.1 2.1(e)	Get Initial Target Brief	30
7.1 2.1(f)	7.1.1.2(f)	Establish Visual Contact with Other Mission Elements	10
7121(g)	7.1.1.2(g)	Establish AMIRS Contact with Other Mission Elements	10
712.1(h)	7.1.1.2(h)	Establish NVG Contact with Other Mission Elements	10

Annex F - CF18 Air to Ground Goal Inventory With Completion Times

Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.1.2.2(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members	20
7.1.2.2(b)	7.1.1.2(b)	Establish Communications with Other Formation Members	12
7.1.2.2(c)	7.1.1.3(c)	Conduct Formation Join-up	60
7.1 2.2(d)	7.1 1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.1 2 2(e)	7.1 1 2(f)	Establish V1sual Contact with Other Formation Members	10
7 1 2.2(f)	7.1 1.2(g)	Establish AMIRS Contact with Other Formation Members	10
7 1.2.2(g)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	10
7.1 2.2(h)	7 2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7 1.3 1(a)	7 1.1.1(a)	Identify TRP	10
7.1.3.1(b)	7 1.1.1(b)	Establish TRP Hold	300
7.1.3 l(c)	7.1.1 1(c)	Search for TRP	20
7.1 3 2(a)	7 1.1 2(a)	Establish Radar Contact with Other Mission Elements	20
7.1.3 2(b)	7.1.1 2(b)	Establish Communications with Other Mission Elements	12
7.1.3.2(c)	7.1.1 2(c)	Establish Communications with Controlling Agency	15
7 1 3.2(d)	7.1 1.2(d)	Get Tactical Update and Area Brief	15
7.1.3.2(e)	7.1.1.2(e)	Confirm Friendly Force and Adversary Disposition on LINK 16	5/MI 10
7.1.3.2(f)	7.1.1.2(f)	Establish Visual Contact with Other Mission Elements	10
7.1.3.2(g)	7.1.1.2(g)	Establish AMIRS Contact with Other Mission Elements	10
7.1.3.2(h)	7.1.1.2(h)	Establish NVG Contact with Other Mission Elements	10
7.1.3.3(a)	7 1.1.2(a)	Establish Radar Contact with Other Formation Members	20
7.1.3.3(b)	7 1.1.2(b)	Establish Communications with Other Formation Members	12
7.1.3.3(c)	7.1.1.3(c)	Conduct Formation Join-up	60
7 1 3 3(d)	7.1.1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.1.3 3(e)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	10
7.1.3 3(f)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members	10
7 1 3.3(g)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	10
7.1 3.3(h)	7 2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7 1 4.1(a)	7.1.1.2(a)	Establish Radar Contact with Other Mission Elements	20
7.1.4.1(b)	7.1.1 2(b)	Establish Communications with Other Mission Elements	12
7 1.4.1(c)	7 1.4.1(c)	Conduct Weapons Check-In with Controlling Agency	10

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.1.4.1(d)	7.1.1.2(d)	Get Tactical Update and Area Brief	15
7.1.4.1(e)	7.1.1.2(e)	Confirm Friendly Force and Adversary Disposition on Link 16/	MID 10
7.1.4.1(f)	7.1.4.1(f)	Confirm Positive Radar Identification by Naval Controlling Age	ency 10
7 1.4.1(g)	7.1 1.2(f)	Establish Visual Contact with Other Mission Elements	10
7.1.4.1(h)	7.1.1.2(g)	Establish AMIRS Contact with Other Mission Elements	10
7 1.4.1(1)	7.1 1 2(h)	Establish NVG Contact with Other Mission Elements	10
7.1 4 2(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members	20
7.1.4 2(b)	7.1.1 2(b)	Establish Communications with Other Formation Members	12
7.1.4.2(c)	7.1.1.3(c)	Conduct Formation Join-up	60
7 1 4.2(d)	7.1.1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.1.4.2(e)	7.1.4.2(e)	Establish Radar Contact with Naval Ships	20
7.1.4 2(f)	7.1.4.2(f)	Deploy to CAP	20
7.1.4.2(g)	7.1.4.2(g)	Establish Visual Contact with Naval Ships	10
7 1.4 2(h)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members	10
7.1.4.2(1)	7.1.4.2(i)	Establish AMIRS Contact with Naval Ships	15
7 1.4.2(j)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	10
7 1.4 2(k)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	10
7 1.4 2(l)	7.1.4.2(1)	Establish NVG Contact with Naval Ships	10
7.1.4.2(m)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7.1.5.1(a)	7 1.1.2(e)	Confirm Friendly Force and Adversary Disposition on LINK 16	5/MI 10
7.1.5.1(b)	7.1.5.1(b)	Establish Radar Contact with AAR	15
7.1.5.1(c)	7 1.5.1(c)	Establish Communications with AAR	10
7.1.5.1(d)	7 1.5.1(d)	Conduct Pre AAR RV Checks	15
7.1.5 1(e)	7.1.5.1(e)	Establish Visual Contact with AAR	10
7.1.5.1(f)	7 1.5.1(f)	Establish AMIRS Contact With AAR	10
7.1.5.1(g)	7.1.5.1(g)	Establish NVG Contact with AAR	10
7.1.5.2(a)	7.1.5.2(a)	Conduct AAR Sensors to Visual Intercept	300
7.1 5.2(b)	7.1.5.2(b)	Adopt AAR Towline Waiting Position	30
7 1 5.2(c)	7.1.5.2(c)	Join In Echelon Position	60
7.1.5.2(d)	7.1.5.2(d)	Position Astern AAR Hoses	20

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Goal ID	Source Goal	Goal Label (Goal Completion Time (s)
7.1.5.2(e)	7.1 5.2(e)	Conduct Pre-Contact AAR Checks	15
7 1.5 2(f)	7.1.5.2(f)	Conduct AAR Sensors to NVG Intercept	300
7 1.5 2(g)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7 1.6.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameter	rs 3
7.1.6.1(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members	4
7.1.6.1(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elem	ients 4
7.1.6.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns	5
7.1.6.1(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns	10
7.1.6 1(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts	30
7161(g)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7161(h)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	5
7.1.6.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	2
7.1.6.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Member	s 4
7.1.6.2(c)	7.2.7 2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Ele	emer 4
7.1 6 2(d)	7.2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns	5
7.1.6.2(e)	7.2.7.2(e)	Advise on AMIRS Acquired Unknowns	10
7.1.6.2(f)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS	30
7.1.6.2(g)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF	15
7.1.6.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns	5
7.1.6.3(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members	2
7.1.6.3(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Elen	nent 2
7.1.6.3(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns	5
7.1.6.3(e)	7.2.7 3(e)	Advise on Visually Acquired Unknowns	15
7.1.6.3(f)	7.2.7.3(f)	Maintain NVG V1sual Search Patterns	7
7.1.6.3(g)	7.2 7.3(g)	Monitor and Maintain NVG Contact with Formation Members	7
7.1.6.3(i)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elem	ents 7
7 1.6.3(J)	7 2.7.3(1)	Monitor and Maintain NVG Contact with Unknowns	7
7 2.1 1(a)	7.2.1.1(a)	Reduce Aircraft Emissions (EMCON Procedures)	7
7.2.1.1(b)	7 2 1.1(b)	Ingress at Low Altitude (Sophisticated Environment)	999
7 2.1.1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environment)	999

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Goal ID	Source Goal	Goal Label (Goal Completion Time (s)
7.2.1.1(d)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30
7.2.1.1(e)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7 2.2.1(a)	7.2 2.1(a)	Conduct A/G Check	15
7.2.2.1(b)	7.2.2.1(b)	Identify Initial Point Visually	5
7.2.2.1(c)	7.2.2.1(c)	Designate/Add Offset at Initial Point	25
7.2.2.1(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7.2 2 1(e)	7.2.2.1(b)	Identify Target/DMPI V1sually	5
7.2 2 1(f)	7.2.2.1(f)	Conduct Element Split Attacks	70
7.2.2.1(g)	7.2.2.1(g)	Validate Weapons Solution Display	2
7 2.2 1(h)	7 2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)	3
7 2.2.1(i)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre	15
7 2.2.1(j)	7.2.2.1(J)	Conduct Frag Avoidance Manoeuvre	15
7 2.2.1(k)	7.2.2.1(k)	Conduct BDA	5
7.2.2.1(1)	7 2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sec	tions 120
7.2.2.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Display	ys 5
7 2.2.1(n)	7.2.2.1(n)	Search for Initial Point	10
7.2.2 1(o)	7.2.2.1(o)	Search for Target	4
7 2 2.1(p)	7.2.2.1(p)	Identify Initial Point with NVG	5
7 2.2.1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG	5
7.2.2.2(a)	7.2.2.1(a)	Conduct A/G Check	15
7 2.2.2(b)	7.2.2.2(b)	Designate Target Position	25
7.2.2.2(c)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors	10
7.2.2 2(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7 2.2 2(e)	7 2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	10
7.2.2 2(f)	7.2.2.1(g)	Validate Weapons Solution Display	2
7 2.2.2(g)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)	5
7 2 2.2(h)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery	50
7 2 2.2(i)	7.2.2.2(i)	Conduct Buddy-Lasing LGB Delivery	50
7.2.2.2(J)	7.2.2.2(J)	Update Target Designation	40
7.2.2.2(k)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre	15

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Goal ID	Source Goal	Goal Label Goal C	ompletion Time (s)
7 2.2.2(1)	7.2.2.1(k)	Conduct BDA	5
7.2.2.2(m)	7.2.2.1(l)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections	120
7.2.2.2(n)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays	5
7.2.2.2(o)	7.2.2.1(J)	Conduct Frag Avoidance Manoeuvre	15
7.2.3.1(a)	7.1.1 2(a)	Establish Radar Contact with Other Formation Members	20
7.2.3.1(b)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	5
7 2.3.1(c)	7.1.1.3(c)	Conduct Formation Join-up	60
7 2.3.1(d)	7.1 1.2(f)	Establish Visual Contact with Other Formation Members	10
7 2 3 1(e)	7.1.1.2(g)	Establish AMIRS Contact with Other Formation Members	10
7.2 3.1(f)	7.1 1.2(h)	Establish NVG Contact with Other Formation Members	10
7 2 3.2(a)	7.2.1.1(a)	Allow Aircraft Emmisions for Identification	7
7.2.3.2(b)	7.2.3.2(b)	Egress at Low Altitude	999
7 2 3 2(c)	7.2.3.2(c)	Egress at Medium/High Altitude	999
7.2.3.2(d)	7.2.3.2(d)	Conduct Lame Duck Procedures	999
7.2.3.2(e)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30
7.2.3 2(f)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7.2.4.1(a)	7.2.4.1(a)	Pass IFREP	15
7 2.4 2(a)	7.2.4.2(a)	Conduct BD Check	90
7.2.4.2(b)	7.2.4.2(b)	Conduct Fence Out Check	15
7 2.5.1(a)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen	999
7 2 5.1(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7.2 5.1(c)	7.2 5.1(c)	Execute Manoeuvre Turns	30
7 2.5.1(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	5
7 2.5.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation	999
7.2.5.2(b)	7.2.5.2(b)	Maintain Visual Mutual Support	999
7 2.5.2(c)	7.2.5.2(c)	Maintain Positional Mutual Support	999
7 2.5.2(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	5
7.2 5.2(e)	7.2 5.2(e)	Maintain Visual Mutual Support with NVG	999
7.2 5.2(f)	7 2.5.2(f)	Communicate with Formation Members via Discreet Frequency	5
7.2.5.2(g)	7.2.5.2(g)	Communicate with Formation Members via Data Link	10

Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.2.6.1(a)	7.2.6.1(a)	Maintain Ground Track	999
7.2.6.1(b)	7.2.6 1(b)	Adhere to ACO	999
726.1(c)	7 2.6.1(c)	Adjust G/S to Make Tasking Timings	10
7 2.6.1(d)	7.2 6.1(d)	Monitor and Avoid ACO Restricted Areas	999
7.2 6.2(a)	7.2.6.2(a)	Navigate Using Visual References	10
7.2.6.2(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DD	Is 10
7.2.6.2(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates	15
7.2.6.2(d)	7.2.6.2(d)	Employ Watch Map Ground Technique	20
7 2 6.2(e)	7.2.6.2(e)	Arrive at Target at Predetermined TOT	999
7.2.6 2(f)	7.2.6.2(f)	Navigate Using NVG Visual References	20
7.2 6 3(a)	7.2.6.3(a)	Monitor and Avoid Weather	10
7.2 6.3(b)	7.2.6.3(b)	Monitor and Avoid Obstacles	999
7.2 6 3(c)	7 2.6.3(c)	Monitor and Avoid Terrain	999
7.2.6 3(e)	7.2.6.3(e)	Monitor and Avoid Other Aircraft	999
7.2.7.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameter	rs 3
7 2.7.1(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members	4
7.2 7 1(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elen	nents 4
7.2 7.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns	5
7.2.7.1(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns	10
7 2.7.1(f)	7.2 7.1(f)	Radar Sort Multiple Unknown Contacts	30
7.2.7.1(g)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7.2.7.1(h)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	5
7.2.7 2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	2
7.2.7 2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Member	-s 4
7.2 7 2(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Ele	emer 4
7.2.7.2(d)	7.2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns	5
7 2.7.2(e)	7.2.7.2(e)	Advise on AMIRS Acquired Unknowns	10
7.2.7.2(f)	7.2 7.2(f)	Sort Multiple Unknown Contacts with AMIRS	30
7.2.7.2(g)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF	15
7.2 7 3(a)	7.2 7.3(a)	Maintain Visual Search Patterns	5

Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.2.7.3(b)	7.2 7 3(b)	Monitor and Maintain Visual Contact with Formation Members	2
7.2 7.3(c)	7.2 7 3(c)	Monitor and Maintain Visual Contact with Lateral Mission Eler	nent 2
7.2 7.3(d)	7.2 7.3(d)	Monitor and Maintain Visual Contact with Unknowns	5
7.2.7 3(e)	7.2.7 3(e)	Advise on Visually Acquired Unknowns	15
7.2 7.3(f)	7.2.7.3(f)	Maintain NVG Visual Search Patterns	7
7.2.7.3(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members	7
7.2 7.3(h)	7.2.7 3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elem	ents 7
7.2.7.3(1)	7 2.7.3(i)	Monitor and Maintain NVG Contact with Unknowns	7
7 3.1 1(a)	7.2.1.1(a)	Reduce Aircraft Emissions (EMCON Procedures)	7
7 3 1.1(b)	7.2.1.1(b)	Ingress at Low Altitude (Sophisticated Environment)	999
7.3.1.1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environement)	999
7.3.1.1(d)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30
7.3.1.1(e)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7 3.2.1(a)	7.3.2.1(a)	Copy Target Brief from FAC	90
7.3.2.1(b)	7.3 2 1(b)	Read Back Mandatory Items to FAC	90
7.3.2 1(c)	7 3.2.1(c)	Enter Target Location in Aircraft database	30
7.3 2.1(d)	7.3.2.1(e)	Confirm Target Location and Restrictions on MAP/HSD	60
7 3.2.1(e)	7.3.2.1(e)	Communicate with FAC via DATA LINK 16	60
7.3 2.2(a)	7.3.2.2(a)	Receive Target Description Brief from FAC	120
7.3.2.2(b)	7.3.2.2(b)	Find Target Using Sensors	120
7 3 2.2(c)	7.3.2.2(c)	Find Target Visually	60
7 3 2.2(d)	7.3.2.2(d)	Communicate Target Acquired	10
7.3.2.2(e)	7.3.2.2(e)	Describe Target Area and Target to FAC	60
7.3.2.2(f)	7.3.2.2(f)	Conduct Target Run In	120
7.3 2.2(g)	7.3.2.1(e)	Communicate with FAC via DATA LINK 16	60
7.3.2.2(h)	7.3.2.2(h)	Find Target with NVG	60
733.1(a)	7.2.2.1(a)	Conduct A/G Check	15
7.3.3.1(b)	7.2.2.1(b)	Identify Initial Point Visually	5
7.3.3.1(c)	7.2.2.1(c)	Designate/Add Offset at Initial Point	25
7.3.3 1(d)	7 2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30

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Goal ID	Source Goal	Goal Label C	Goal Completion Time (s)
7.3.3 1(e)	7.2.2 1(b)	Identify Target/DMPI Visually	5
7331(f)	7.2 2 1(f)	Conduct Element Split Attacks	70
7 3.3.1(g)	7 2 2.1(g)	Validate Weapons Solution Display	2
7.3.3.1(h)	7.2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)	3
7 3.3 1(1)	7.2.2.1(1)	Conduct Safe Escape Manoeuvre	15
7.3.3.1(j)	7.2.2.1(J)	Conduct Frag Avoidance Manoeuvre	15
7.3 3 1(k)	7.2.2.1(k)	Conduct BDA	5
7 3 3 1(1)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sect	ions 120
7.3.3.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Display	rs 5
7.3.3 1(n)	7.2.2.1(n)	Search for Initial Point	10
7.3.3.1(o)	7.2.2.1(o)	Search for Target	4
733.1(p)	7.2 2.1(p)	Identify Initial Point with NVG	5
7.3.3.1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG	5
7 3.3 2(a)	7.2.2.1(a)	Conduct A/G Check	15
7 3 3 2(b)	7.2.2.2(b)	Designate Target Position	25
7 3.3.2(c)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors	10
7.3 3.2(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7.3 3.2(e)	7.2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	10
7 3 3.2(f)	7.2.2.1(g)	Validate Weapons Solution Display	2
7.3 3 2(g)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)	5
7.3 3 2(h)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery	50
7.3 3.2(i)	7.2.2 2(i)	Conduct Buddy-Lasing LGB Delivery	50
7.3 3 2(j)	7.2 2.2(j)	Update Target Designation	40
7.3.3 2(k)	7.2.2.1(1)	Conduct Safe Escape Manoeuvre	15
7.3 3.2(1)	7.2.2.1(k)	Conduct BDA	5
7 3 3.2(m)	7.2 2.1(l)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sect	ions 120
7.3.3.2(n)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Display	7 S 5
7 3 3 2(0)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre	15
7 3.4.1(a)	7.1 1.2(a)	Establish Radar Contact with Other Formation Members	20
7.3.4.1(b)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Display	s 5

Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.3.4.1(c)	7.1.1.3(c)	Conduct Formation Join-up	60
7 3.4.1(d)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	10
7.3.4.1(e)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	10
7.3.4 2(a)	7.2.1.1(a)	Allow Aircraft Emmisions for Identification	7
7.3 4 2(b)	7.2.3.2(b)	Egress at Low Altitude	999
7.3 4 2(c)	7.2.3 2(c)	Egress at Medium/High Altıtude	999
7 3 4.2(d)	7.2.3.2(d)	Conduct Lame Duck Procedures	999
7 3 4.2(e)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30
7.3.4.2(f)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7 3.5.1(a)	7.2.4.1(a)	Pass IFREP	15
7.3.5.2(a)	7.2 4.2(a)	Conduct BD Check	90
7.3.5.2(b)	7.2.4.2(b)	Conduct Fence Out Check	15
7.3.6.1(a)	7.2 5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen	999
7.3.6.1(b)	7.2 5 1(b)	Maintain Aircraft Control and Flight Position	999
7.3.6.1(c)	7.2.5.1(c)	Execute Manoeuvre Turns	30
7 3.6 1(d)	7 1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7 3.6 2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation	999
7.3.6.2(b)	7.2.5.2(b)	Maintaın Visual Mutual Support	999
7.3.6.2(c)	7.2.5.2(c)	Maintain Positional Mutual Support	999
7.3.6 2(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.3.6.2(e)	7.2.5.2(e)	Maintain Visual Mutual Support with NVG	999
7 3.6.2(f)	7.2.5.2(f)	Communicate with Formation Members via Discreet frequency	5
7.3 6 2(g)	7.2.5.2(g)	Communicate with Formation Members via Data Link	10
7.3.7.1(a)	7.2 6.1(a)	Maintain Ground Track	999
7.3.7.1(b)	7.2.6.1(b)	Adhere to ACO	999
7371(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings	10
7 3.7.1(d)	7.2.6.1(d)	Monitor and Avoid ACO Restricted Areas	999
7.3.7 2(a)	7.2.6.2(a)	Navigate Using Visual References	10
7.3.7.2(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DI	DIs 10
7.3.7.2(c)	7.2.6 2(c)	Perform Navigation Systems Designations/Updates	15

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Goal ID	Source Goal	Goal Label (Goal Completion Time (s)
7.3 7.2(d)	7.2.6.2(d)	Employ Watch Map Ground Technique	20
7 3 7.2(e)	7.2.6.2(e)	Arrive at Target at Predetermined TOT	999
7.3.7 2(f)	7 2.6.2(f)	Navigate Using NVG Visual References	20
7.3.7.3(a)	7.2 6.3(a)	Monitor and Avoid Weather	10
7.3 7.3(b)	7.2.6.3(b)	Monitor and Avoid Obstacles	999
7.3.7.3(c)	7.2.6.3(c)	Monitor and Avoid Terrain	999
7.3.7 3(d)	7.2.6.3(e)	Monitor and Avoid Other Aircraft	999
7.3.8.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameter	rs 3
7381(b)	7.2 7.1(b)	Monitor and Maintain Radar Contact with Formation Members	4
7.3.8.1(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elem	ients 4
7.3.8.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns	5
7.3.8.1(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns	10
7.3.8.1(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts	30
7.3 8 1(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	5
7.3 8 1(h)	7.2.7 1(g)	Interrogate Unknown Radar Contacts with IFF	15
7.3.8.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	2
7.3.8.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Member	s 4
7382(c)	7.2.7 2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Ele	emer 4
7.3.8.2(d)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF	15
7 3.8.2(e)	7 2 7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns	5
7 3 8.2(f)	7 2.7.2(e)	Advise on AMIRS Acquired Unknowns	10
7.3 8.2(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS	30
7.3.8.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns	5
7.3.8.3(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members	2
7.3 8.3(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Eler	nent 2
7.3.8.3(d)	7.2.7.3(d)	Monitor and Maintain V1sual Contact with Unknowns	5
7383(e)	7.2 7.3(e)	Advise on Visually Acquired Unknowns	15
7 3 8 3(f)	7.2.7.3(f)	Maintain NVG Visual Search Patterns	7
7.3.8.3(g)	7.2.7 3(g)	Monitor and Maintain NVG Contact with Formation Members	7
7.3.8.3(h)	7.2.7 3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elem	ents 7

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.3.8.3(1)	7.2.7.3(1)	Monitor and Maintain NVG Contact with Unknowns	7
7.4.1.1(a)	7.2.1.1(a)	Reduce Aircraft Emissions (EMCON Procedures)	7
7.4.1 1(b)	7.2.1.1(b)	Ingress at Low Altitude (Sophisticated Environment)	999
7.4 1 1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environement)	999
7.4.1 1(d)	7 2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30
7.4.1.1(e)	7 2 1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7 4.2 l(a)	7.4.2.1(a)	Conduct V1sual Lookout	5
7 4.2 1(b)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10
7.4.2.1(c)	7 4.2.1(c)	Acquire Enemy Targets on LINK 16/MIDS Displays	15
7.4.2.1(d)	7.4 2.1(d)	Find Target with Radar Search Sort and Target Contract	30
7 4.2.1(e)	7.4.2 1(e)	Utilize Lateral Mission Element Tactical Information	30
7.4.2.1(f)	7 4 2 1(f)	Find Target with AMIRS Search Sort and Target Contract	30
7 4 2.1(g)	7.4.2.1(g)	Conduct Visual Lookout with NVG	7
7.4.2.2(a)	7.4 2 2(a)	Report Target via LINK 16/MIDS Secure Communications	20
7.4.2.2(b)	7.4.2 2(b)	Report Target via Have Quick II Secure Communications	20
7.4.2.2(c)	7.4.2.2(c)	Utilize C2 Directive and Descriptive Commentary	10
7.4 2.2(d)	7.2.2.1(b)	Identify Target/DMPI Visually	5
7.4.2 2(e)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors	10
7.4.2.2(f)	7.2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	5 10
7.4.2.2(g)	7.2.2 l(p)	Identify Initial Point with NVG	5
7.4.3.1(a)	7.2.2.1(b)	Identify Initial Point Visually	5
7.4.3.1(b)	7.2.2.1(c)	Designate/Add Offset at Initial Point	25
7.4.3.1(c)	7.2.2.1(a)	Conduct A/G Check	15
7.4.3 1(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7.4.3.1(e)	7 2.2.1(b)	Identify Target/DMPI Visually	5
7 4.3.1(f)	7 2.2.1(f)	Conduct Element Split Attacks	70
7.4.3.1(g)	7.2.2.1(g)	Valıdate Weapons Solution Display	2
7 4.3 1(h)	7.2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)	3
7.4.3.1(i)	7.2 2.1(i)	Conduct Safe Escape Manoeuvre	15
7 4.3.1(j)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre	15

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Goal ID	Source Goal	Goal Label Goal G	Completion Time
7.4.3.1(k)	7.2.2.1(k)	Conduct BDA	5
7.4.3 1(1)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections	120
7.4.3.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays	5
7.4.3.1(n)	7 2.2.1(n)	Search for Initial Point	10
7.4.3.1(o)	7 2 2 1(o)	Search for Target	4
7.4.3.1(p)	7 2 2.1(p)	Identify Initial Point with NVG	5
7 4.3.1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG	5
7.4.3.2(a)	7.2.2.1(a)	Conduct A/G Check	15
7 4.3.2(b)	7.2.2.2(b)	Designate Target Position	25
7.4.3.2(c)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors	10
7.4.3.2(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7.4.3.2(e)	7.2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	10
7 4 3.2(f)	7.2.2.1(g)	Validate Weapons Solution Display	2
7.4.3.2(g)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)	5
7.4.3.2(h)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery	50
7.4.3.2(1)	7.2.2.2(i)	Conduct Buddy-Lasing LGB Delivery	50
7.4.3.2(J)	7.2.2.2(j)	Update Target Designation	40
7.4.3.2(k)	7.2.2.2(1)	Conduct Buddy-Lasing LGB Delivery	50
7.4.3.2(l)	7.2.2.1(k)	Conduct BDA	5
7.4 3.2(m)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections	120
7.4 3.2(n)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displays	5
7.4 3 2(o)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre	15
7.4.3.2(p)	7.2.2.1(J)	Conduct Frag Avoidance Manoeuvre	15
7.4.4.1(a)	7.1.1.2(a)	Establish Radar Contact with Other Formation Members	20
7.4.4.1(b)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	5
7.4.4.1(c)	7.1.1 3(c)	Conduct Formation Join-up	60
7.4 4 1(d)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	10
7.4 4 1(e)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	10
7.4 4 2(a)	7.2.1.1(a)	Allow Aircraft Emmisions for Identification	7
7.4.4.2(b)	7.2.3 2(b)	Egress at Low Altitude	999

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7 4 4.2(c)	7.2.3.2(c)	Egress at Medium/High Altitude	999
7.4 4.2(d)	7.2.3.2(d)	Conduct Lame Duck Procedures	999
7.4.4.2(e)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30
7.4.4.2(f)	7 2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7.4.5.1(a)	7.2.4.1(a)	Pass IFREP	15
7.4.5 2(a)	7.2.4.2(a)	Conduct BD Check	90
7.4.5.2(b)	7.2.4.2(b)	Conduct Fence Out Check	15
7.4 6 1(a)	7.2.5 1(a)	Establish Tactical Roles - Tactical Leads and Wingmen	999
7461(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7.4 6 1(c)	7.2.5.1(c)	Execute Manoeuvre Turns	30
7.4.6.1(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.4.6.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation	999
7.4.6.2(b)	7.2.5.2(b)	Maintain Visual Mutual Support	999
7.4.6.2(c)	7.2.5.2(c)	Maintain Positional Mutual Support	999
7462(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.4.6 2(e)	7.2.5.2(e)	Maintain Visual Mutual Support with NVG	999
7.4.6.2(f)	7.2.5.2(f)	Communicate with Formation Members via Discreet frequency	5
7.4 6.2(g)	7.2.5.2(g)	Communicate with Formation Members via Data Link	10
7.4 7 1(a)	7 2 6.1(a)	Maintain Ground Track	999
7.4 7 1(b)	7 2.6.1(b)	Adhere to ACO	999
7.4 7.1(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings	10
7 4.7 1(d)	7.2 6 1(d)	Monitor and Avoid ACO Restricted Areas	999
7.4.7.2(a)	7.2.6.2(a)	Navigate Using Visual References	10
7.4.7.2(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DI	DIs 10
7.4.7.2(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates	15
7.4 7.2(d)	7.2.6.2(d)	Employ Watch Map Ground Technique	20
7.4 7.2(e)	7.2.6 2(e)	Arrive at Target at Predetermined TOT	999
7.4.7.2(f)	7.2.6.2(f)	Navigate Using NVG Visual References	20
7.4 7 3(a)	7.2.6.3(a)	Monitor and Avoid Weather	10
7 4 7 3(b)	7.2.6.3(b)	Monitor and Avoid Obstacles	999

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Goal ID	Source Goal	Goal Label (Goal Completion Time (s)
7.4.7.3(c)	7.2 6.3(c)	Monitor and Avoid Terrain	999
7.4.7.3(d)	7.2.6.3(e)	Monitor and Avoid Other Aircraft	999
7 4.8.1(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameter	rs 3
7.4.8.1(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members	4
7.4.8.1(c)	7 2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elen	ients 4
7.4.8.1(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns	5
7.4 8 1(e)	7 2.7.1(e)	Advise on Radar Acquired Unknowns	10
7.4.8.1(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts	30
7.4.8.1(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	5
7 4.8.1(h)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7 4.8.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	2
7.4.8.2(b)	7.2.7 2(b)	Monitor and Maintain AMIRS Contact with Formation Member	s 4
7.4.8.2(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Ele	emer 4
7 4.8.2(d)	7.2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF	15
7.4.8 2(e)	7.2.7 2(d)	Monitor and Maintain AMIRS Contact with Unknowns	5
7.4.8 2(f)	7.2.7.2(e)	Advise on AMIRS Acquired Unknowns	10
7.4.8.2(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS	30
7 4.8.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns	5
7.4.8.3(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members	2
7.4.8.3(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Eler	nent 2
7.4.8.3(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns	5
7.4.8.3(e)	7.2.7 3(e)	Advise on Visually Acquired Unknowns	15
7.4.8.3(f)	7 2.7 3(f)	Maintain NVG Visual Search Patterns	7
7.4.8.3(g)	7.2 7 3(g)	Monitor and Maintain NVG Contact with Formation Members	7
7.4.8.3(h)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elem	ents 7
7.4.8.3(i)	7.2.7.3(i)	Monitor and Maintain NVG Contact with Unknowns	7
751.1(a)	7.2.1.1(a)	Reduce Aircraft Emissions (EMCON Procedures)	7
7.5.1.1(b)	7.2.1 1(b)	Ingress at Low Altitude (Sophisticated Environment)	999
7.5 1 1(c)	7.2.1.1(c)	Ingress at Medium/High Altitude (Permissive Environment)	999
7 5.1.1(d)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30

Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.5 1 1(e)	7 2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7.5.2.1(a)	7.2.5 2(a)	Optimize Formation for Tactical Situation	999
7.5.2.1(b)	7.5.2.1(b)	Conduct CAP	999
7 5 2.2(a)	7.5.2.2(a)	Employ Radar Search Sort and Target Contract	60
7 5.2.2(b)	7 4.2.1(a)	Conduct Visual Lookout	5
7.5 2.2(c)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10
7.5 2 2(d)	7.5.2 2(d)	Initiate and Monitor EID of Unknowns	10
7.5.2 2(e)	7.5.2.2(e)	Advise on Approaching Threats	7
7.5 2.2(f)	7.5.2.2(f)	Advise on Visually Acquired Threats	5
7.5.2.2(g)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	30
7.5.2.2(h)	7.5.2.2(h)	VID Unknowns	5
7.5.2.2(i)	7.4.2.2(a)	Employ LINK 16/MIDS Secure Communications	20
7.5 2.2(j)	7.4.2.2(c)	Utilize C2 Directive and Descriptive Commentary	10
7.5.2.2(k)	7.4.2.1(e)	Utilize Lateral Mission Element Tactical Information	30
7.5.2.2(1)	7.5.2.2(1)	Employ AMIRS Search Sort and Target Contract	60
7.5.2.2(m)	7 2.7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7 5 2 2(n)	7.4.2 2(b)	Employ Have Quick II Secure Communications	20
7.5.2.2(o)	7.4.2.1(g)	Conduct Visual Lookout with NVG	7
7.5.2.2(p)	7.5.2.2(p)	VID Unknowns with NVG	7
7.5.2.3(a)	7.5.2.3(a)	Employ Tactical Deception	999
7 5.2.3(b)	7.5.2.3(b)	Dispense Chaff	3
7.5.2.3(c)	7.5.2.3(c)	Employ Jammers	15
7 5.2.3(d)	7.5.2.3(d)	Employ BVR Deception Tactics	300
7 5.2 4(a)	7.5.2.4(a)	Manoeuvre/Expose the Tactical Formation	30
7.5.2.4(b)	7.5.2.4(b)	Illuminate Enemy Aır RWR	3
7.5.2 4(c)	7.5 2.4(c)	Enhance Enemy Air Radar Acquisition	20
7 5.2 4(d)	7.5.2 4(d)	Draw Enemy Air Away	300
7.5.2 4(e)	7 5.2.4(e)	Negate Enemy Air Weapons Employment	20
7.5.2.5(a)	7.5.2.5(a)	Deny Enemy Air Weapons Solution	999
7.5.2.5(b)	7.5.2.5(b)	Negate Enemy Air Weapons Employment	30

Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.5 2 5(c)	7.5.2.5(c)	Employ Air-to-Air RMD	120
7 5 2.5(d)	7.5.2 5(d)	Employ Air-to-Air IRMD	60
7525(e)	7.5.2.5(e)	Employ AAGD	45
7.5.2.5(f)	7.5.2.5(f)	Egress Engagement Safely	20
7 5.2.5(g)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10
7 5.2 5(h)	7.5 2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	30
7 5.2.6(a)	7.5.2.6(a)	Manoeuvre Aircraft to Intercept Enemy	300
7.5.2.6(b)	7.5.2.5(b)	Negate Enemy Air Weapons Employment	30
7.5 2.6(c)	7.5 2.5(a)	Deny Enemy Air Weapons Solution	999
7.5.2.7(a)	7.5.2.7(a)	Manoeuvre to a Weapons Engagement Zone	60
7 5 2 7(b)	7.2.2.1(g)	Validate Weapons Solution Display	2
7 5 2.7(c)	7.5.2.7(c)	Employ Weapons	10
7.5.2.7(d)	7.5 2 7(d)	Maintain Post Attack Offensive	60
7.5 2 7(e)	7.5.2.5(f)	Egress Engagement Safely	20
7.5 2 7(f)	7.5.2.7(f)	Assess Post Merge ACM Options	30
7.5 2.7(g)	7.5 2 7(g)	Monitor Weapon Fly Out	50
7.5.3.1(a)	7.4.2.1(a)	Conduct Visual Lookout	5
7.5 3 1(b)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10
7.5.3.1(c)	7 4.2.1(c)	Acquire Enemy Targets on LINK 16/MIDS Displays	15
7.5.3.1(d)	7.4.2.1(d)	Find Target with Radar Search Sort and Target Contract	30
7531(e)	7.4.2.1(e)	Utilize Lateral Mission Element Tactical Information	30
7.5 3.1(f)	7.4.2.1(f)	Find Target with AMIRS Search Sort and Target Contract	30
7.5.3.2(a)	7.4.2.2(a)	Report Target via LINK 16/MIDS Secure Communications	20
7.5 3 2(b)	7.4.2.2(b)	Report Target via Have Quick II Secure Communications	20
7532(c)	7.4.2.2(c)	Utilize C2 Directive and Descriptive Commentary	10
7.5.3.2(d)	7.2.2.1(b)	Identify Target/DMPI Visually	5
7.5 3 2(e)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors	10
7 5.3 2(f)	7.2 2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	5 10
7 5 3.2(g)	7 2.2.1(p)	Identify Target/DMPI with NVG	5
7 5.4.1(a)	7 2 2.1(a)	Conduct A/G Check	15

Goal ID	Source Goal	Goal Label C	Goal Completion Time (s)
7541(b)	7.2.2.1(b)	Identify Initial Point Visually	5
7.5.4.1(c)	7 2.2.1(c)	Designate/Add Offset at Initial Point	25
7.5.4.1(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7.5.4.1(e)	7.2.2.1(b)	Identify Target/DMPI Visually	5
7.5.4.1(f)	7.2.2.1(f)	Conduct Element Split Attacks	70
754.1(g)	7.2 2.1(g)	Validate Weapons Solution Display	2
7.5.4.1(h)	7.2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)	3
7.5.4.1(i)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre	15
7.5.4.1(j)	7.2.2.1(J)	Conduct Frag Avoidance Manoeuvre	15
7.5 4.1(k)	7.2.2.1(k)	Conduct BDA	5
7.5 4 1(l)	7.2.2 1(l)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sect	tions 120
7.5.4.1(m)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Display	ys 5
754.1(n)	7.2.2.1(n)	Search for Initial Point	10
7.5.4.1(o)	7.2.2.1(o)	Search for Target	4
7.5.4.1(p)	7.2.2.1(p)	Identify Initial Point with NVG	5
7.5.4.1(q)	7.2.2.1(p)	Identify Target/DMPI with NVG	5
7 5.4.2(a)	7.2 2.1(a)	Conduct A/G Check	15
7.5.4.2(b)	7.2.2.2(b)	Designate Target Position	25
7 5.4 2(c)	7 2.2.2(c)	Identify Target Area with Aircraft Sensors	10
7.5.4.2(d)	7.2.2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7.5.4.2(e)	7.2.2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	10
7.5.4.2(f)	7.2 2.1(g)	Validate Weapons Solution Display	2
7.5.4.2(g)	7.2.2 2(g)	Deliver PGM (LGB/MAV/Adv PGM)	5
754.2(h)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery	50
7.5.4.2(1)	7.2 2.2(i)	Conduct Buddy-Lasing LGB Delivery	50
7 5.4.2(J)	7.2.2.2(j)	Update Target Designation	40
7 5.4.2(k)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre	15
7.5.4.2(1)	7.2.2.1(k)	Conduct BDA	5
7.5.4.2(m)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aırcraft/Elements/Sec	tions 120
7.5.4 2(n)	7 2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Display	ys 5

Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.5 4 2(o)	7.2.2.1(J)	Conduct Frag Avoidance Manoeuvre	15
7 5.5.1(a)	7.1 1.2(a)	Establish Radar Contact with Other Formation Members	20
7.5.5.1(b)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.5.5.1(c)	7 1.1.3(c)	Conduct Formation Join-up	60
7.5 5 1(d)	7.1.1.2(f)	Establish Visual Contact with Other Formation Members	10
7.5.5.1(e)	7.1.1.2(h)	Establish NVG Contact with Other Formation Members	10
7.5 5 2(a)	7.2.1.1(a)	Allow Aircraft Emmisions for Identification	7
7.5.5.2(b)	7.2.3.2(b)	Egress at Low Altitude	999
7.5.5.2(c)	7.2.3.2(c)	Egress at Medium/High Altitude	999
7 5 5 2(d)	7.2.3.2(d)	Conduct Lame Duck Procedures	999
7.5.5.2(e)	7.2.1.1(d)	Descend to Low Altitude (Sophisticated Environment)	30
7.5.5.2(f)	7.2.1.1(e)	Adjust to Medium/High Altitude (Permissive Environment)	30
7.5.6.1(a)	7.2.4.1(a)	Pass IFREP	15
7.5.6.2(a)	7.2.4.2(a)	Conduct BD Check	90
7.5.6.2(b)	7.2.4.2(b)	Conduct Fence Out Check	15
7.5.7.1(a)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.5.7.1(b)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen	999
7.5.7.1(c)	7.2.5.1(c)	Execute Manoeuvre Turns	30
7.5 7 1(d)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7.5 7 1(e)	7 2.5.2(f)	Communicate with Formation Members via Discreet frequency	5
7.5.7.1(f)	7.2.5.2(g)	Communicate with Formation Members via Data Link	10
7.5.7.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation	999
7.5.7.2(b)	7.2 5.2(b)	Maintain Visual Mutual Support	999
7 5 7 2(c)	7.2 5.2(c)	Maintain Positional Mutual Support	999
7 5.7.2(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.5.7 2(e)	7.2.5.2(e)	Maintain Visual Mutual Support with NVG	999
7 5.8.1(a)	7.2.6.1(a)	Maintain Ground Track	999
7.5 8 1(b)	7.2.6.1(b)	Adhere to ACO	999
7581(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings	10
7.5.8.1(d)	7.2.6.1(d)	Monitor and Avoid ACO Restricted Areas	999

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.5 8.2(a)	7.2.6.2(a)	Navigate Using Visual References	10
7 5 8.2(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DD	Is 10
7 5.8.2(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates	15
7.5.8.2(d)	7.2.6.2(d)	Employ Watch Map Ground Technique	20
7.5 8 2(e)	7.2.6.2(e)	Arrive at Target at Predetermined TOT	999
7.5 8 2(f)	7.2.6.2(f)	Navigate Using NVG V1sual References	20
7.5.8.3(a)	7.2.6.3(a)	Monitor and Avoid Weather	10
7.5.8.3(b)	7.2.6.3(b)	Monitor and Avoid Obstacles	999
7.5.8.3(c)	7.2.6.3(c)	Monitor and Avoid Terrain	999
7 5.8.3(d)	7.2 6 3(e)	Monitor and Avoid Other Aircraft	999
7.5.9.1(a)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns	5
7.5.9.1(b)	7 2.7.1(e)	Advise on Radar Acquired Unknowns	10
7.5.9.1(c)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts	30
7.5.9 1(d)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameter	rs 3
7.5.9.1(e)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members	4
7.5.9 1(f)	7.2.7 1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elen	nents 4
7.5.9.1(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	5
7.5.9.1(h)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7 5 9.2(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	2
7.5.9.2(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Member	rs 4
7.5.9.2(c)	7 2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Ele	emer 4
7.5.9 2(d)	7 2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF	15
7 5.9.2(e)	7.2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns	5
7.5.9.2(f)	7 2.7.2(e)	Advise on AMIRS Acquired Unknowns	10
7.5 9.2(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS	30
7 5.9.3(a)	7.2.7.3(a)	Maintain Visual Search Patterns	5
7.5.9.3(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members	2
7 5 9.3(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Elements	ment 2
7.5.9.3(d)	7.2 7.3(d)	Monitor and Maintain Visual Contact with Unknowns	5
7.5.9.3(e)	7.2.7.3(e)	Advise on Visually Acquired Unknowns	15

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Goal ID	Source Goal	Goal Label Goa	al Completion Time (s)
7.5.9.3(f)	7.2.7.3(f)	Maintain NVG Visual Search Patterns	7
7 5.9 3(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members	7
7.5.9.3(h)	7 2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Element	ts 7
7.5.9 3(1)	7.2.7.3(i)	Monitor and Maintain NVG Contact with Unknowns	7
7.6 1 1(a)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen	999
7.6.1.1(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7.6.1.1(c)	7.2.5.1(c)	Execute Manoeuvre Turns	30
7.6.1.2(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation	999
7 6 1.2(b)	7.2 5.2(b)	Maintain Visual Mutual Support	999
7 6 1.2(c)	7 2.5.2(c)	Maintain Positional Mutual Support	999
7.6.1.2(d)	7.2.5.2(e)	Maintain V1sual Mutual Support with NVG	999
761.3(a)	7.2.6.1(a)	Maintain Ground Track	999
7.6.1.3(b)	7.2 6.1(b)	Adhere to ACO	999
7.6.1.3(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings	10
7.6 1 3(d)	7.2.6 1(d)	Monitor and Avoid ACO Restricted Areas	999
7.6 1 4(a)	7.2.6 2(a)	Navigate Using Visual References	10
7.6 1.4(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs	10
7.6.1.4(c)	7.2.6.2(c)	Perform Navigation Systems Designations/Updates	15
7.6.1.4(d)	7.2.6.2(d)	Employ Watch Map Ground Technique	20
7 6.1.4(e)	7.2 6.2(e)	Arrive at Target at Predetermined TOT	999
7.6.1.4(f)	7.2.6.2(f)	Navigate Using NVG Visual References	20
7 6.1.5(a)	7.2.6.3(a)	Monitor and Avoid Weather	10
7.6.1.5(b)	7.2.6.3(b)	Monitor and Avoid Obstacles	999
7.6.1.5(c)	7.2.6.3(c)	Monitor and Avoid Terrain	999
7.6.1.6(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters	3
7.6.1.6(b)	7.2 7.1(b)	Monitor and Maintain Radar Contact with Formation Members	4
7.6.1.6(c)	7.2.7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elemen	its 4
7.6.1 6(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns	5
7.6.1.6(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns	10
7 6.1.6(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts	30

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Goal ID	Source Goal	Goal Label (Goal Completion Time (s)
7.6.1.6(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	5
7.6.1.6(h)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7 6.1.7(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	2
7.6.1.7(b)	7 2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Member	s 4
7.6.1.8(a)	7.2.7.3(a)	Maintain Visual Search Patterns	5
7.6 1 8(b)	7.2.7.3(b)	Monitor and Maintain Visual Contact with Formation Members	2
7 6 1.8(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Elen	nent 2
7.6.1.8(d)	7.2 7.3(d)	Monitor and Maintain Visual Contact with Unknowns	5
7 6.1.8(e)	7.2 7.3(e)	Advise on Visually Acquired Unknowns	15
7.6 1.8(f)	7.2.7.3(f)	Maintain NVG Visual Search Patterns	7
7.6 1.8(g)	7.2.7.3(g)	Monitor and Maintain NVG Contact with Formation Members	7
7.6.1.8(h)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Element	ents 7
7.6.1.8(i)	7.2.7.3(i)	Monitor and Maintain NVG Contact with Unknowns	7
7.6.2 1(a)	7.6.2.1(a)	Generate Positive Closure	2
7.6.2.1(b)	7.6.2.1(b)	Maintain Positive Closure	5
7.6.2.1(c)	7.6.2.1(c)	Monitor and Obey AAR Lights	999
7.6.2.2(a)	7.6.2.2(a)	Position Pitch Ladders	5
7.6.2 2(b)	7.6.2.2(b)	Alıgn Probe	5
7.6 2.2(c)	7.6.2.1(c)	Monitor and Obey AAR Lights	999
7 6.2.3(a)	7.6.2.3(a)	Pick Approach Reference	2
7.6.2.3(b)	7.6.2.3(b)	Maintain Attitude References	10
7.6.2.3(c)	7 6.2.3(c)	Make Contact	2
7.6.2.3(d)	7.6.2.1(c)	Monitor and Obey AAR Lights	999
7.6.3.1(a)	7.6.3.1(a)	Generate Maximum Fuel Transfer	5
7.6.3.1(b)	7.6.2 1(c)	Monitor and Obey AAR Lights	999
7.6.3.2(a)	7.6.3.1(a)	Maintain Hose in Trail Position	5
7 6.3.2(b)	7.6.2.3(c)	Maintain Probe Contact	2
7 6 3.2(c)	7.6.2 1(c)	Monitor and Obey AAR Lights	999
7 6.3.3(a)	7.6.3.3(a)	Generate Negative Closure	3
7.6.3.3(b)	7.6.2 3(b)	Maintain Attitude References	10

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7 6 3.3(c)	7.6.3 3(c)	Move to Astern Position	5
7.6 3.3(d)	7.6.2.1(c)	Monitor and Obey AAR Lights	999
7633(e)	7.6.3.3(e)	Move to Outboard / Echelon Position	10
764.1(a)	7.6.4.1(a)	Establish Departure Echelon Position	5
7.6.4.1(b)	7.6.4 1(b)	Request Clearance to Depart	5
764.1(c)	7.6.4.1(c)	Depart	30
7.6.4.2(a)	7.2.5.1(a)	Establish Tactical Roles - Tactical Leads and Wingmen	999
7.6 4 2(b)	7.2.5.1(b)	Maintain Aircraft Control and Flight Position	999
7.6.4 2(c)	7.2.5.1(c)	Execute Manoeuvre Turns	30
7.6.4.2(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.6.4.3(a)	7.2.5.2(a)	Optimize Formation for Tactical Situation	999
7.6.4 3(b)	7.2.5.2(b)	Maintain Visual Mutual Support	999
7.6.4 3(c)	7.2.5.2(c)	Maintain Positional Mutual Support	999
7.6.4 3(d)	7.1.1.3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displa	ys 5
7.6.4.3(e)	7.2.5.2(e)	Maintain Visual Mutual Support with NVG	999
7.6.4.4(a)	7.2.6.1(a)	Maintain Ground Track	999
7.6.4.4(b)	7.2.6.1(b)	Adhere to ACO	999
7.6.4.4(c)	7.2.6.1(c)	Adjust G/S to Make Tasking Timings	10
7.6 4.4(d)	7.2.6.1(d)	Monitor and Avoid ACO Restricted Areas	999
7.6.4.5(a)	7.2.6.2(a)	Navigate Using V1sual References	10
7.6.4.5(b)	7.2.6.2(b)	Navigate Using Sensors Information Displayed on HSD and DE	DIs 10
7.6.4.5(c)	7 2 6.2(c)	Perform Navigation Systems Designations/Updates	15
7 6.4.5(d)	7.2.6.2(d)	Employ Watch Map Ground Technique	20
7.6.4.5(e)	7.2.6.2(e)	Arrive at Target at Predetermined TOT	999
7.6.4.5(f)	7.2.6.2(f)	Navigate Using NVG Visual References	20
7.6.4.6(a)	7.2.6.3(a)	Monitor and Avoid Weather	10
7.6.4.6(b)	7.2.6.3(b)	Monitor and Avoid Obstacles	999
7 6 4.6(c)	7.2 6 3(c)	Monitor and Avoid Terrain	999
7 6 4.6(d)	7.2.6.3(e)	Monitor and Avoid Other Aircraft	999
7 6.4.7(a)	7.2.7.1(a)	Monitor and Maintain Assigned Radar Sensor Search Paramete	rs 3

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.6 4 7(b)	7.2.7.1(b)	Monitor and Maintain Radar Contact with Formation Members	4
7 6.4.7(c)	7.2 7.1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elen	nents 4
7.6.4.7(d)	7.2.7.1(d)	Monitor and Maintain Radar Contact with Unknowns	5
7.6 4 7(e)	7.2.7.1(e)	Advise on Radar Acquired Unknowns	10
7.6.4 7(f)	7.2.7.1(f)	Radar Sort Multiple Unknown Contacts	30
7.6.4.7(g)	7.2.7.1(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	5
7.6.4.7(h)	7.2 7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7.6 4 8(a)	7.2.7.2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	2
7.6.4.8(b)	7.2.7.2(b)	Monitor and Maintain AMIRS Contact with Formation Member	°S 4
7.6.4.8(c)	7.2.7.2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Ele	emer 4
7 6.4.8(d)	7 2.7.2(g)	Interrogate Unknown AMIRS Contacts with IFF	15
7.6.4.8(e)	7.2.7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns	5
7.6.4 8(f)	7.2 7.2(e)	Advise on AMIRS Acquired Unknowns	10
7.6.4.8(g)	7.2.7.2(f)	Sort Multiple Unknown Contacts with AMIRS	30
7 6.4 9(a)	7 2 7.3(a)	Maintain Visual Search Patterns	5
7 6 4.9(b)	7.2 7.3(b)	Monitor and Maintain Visual Contact with Formation Members	2
7.6.4 9(c)	7.2.7.3(c)	Monitor and Maintain Visual Contact with Lateral Mission Eler	nent 2
7.6 4.9(d)	7.2.7.3(d)	Monitor and Maintain Visual Contact with Unknowns	5
7.6.4.9(e)	7.2.7.3(e)	Advise on Visually Acquired Unknowns	15
7.6.4.9(f)	7.2.7.3(f)	Maintain NVG Visual Search Patterns	7
7 6 4.9(g)	7.2 7.3(g)	Monitor and Maintain NVG Contact with Formation Members	7
7.6 4 9(h)	7.2.7.3(h)	Monitor and Maintain NVG Contact with Lateral Mission Elem	ents 7
7.6.4.9(i)	7.2.7.3(1)	Monitor and Maintain NVG Contact with Unknowns	7
7.7.1.1(a)	7 5 2.2(a)	Employ Radar Search Sort and Target Contract	60
7 7.1.1(b)	7 4 2.1(a)	Conduct Visual Lookout	5
7.7 1.1(c)	7.4 2 1(b)	Respond to displayed RWR Threat Emission Information	10
771.1(d)	7.5.2 2(d)	EID Unknowns	10
7.7.1.1(e)	7.5.2.2(e)	Advise on Approaching Threats	7
7.7.1.1(f)	7.5.2.2(f)	Advise on Visually Acquired Threats	5
7.7.1.1(g)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	30

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.7 1.1(h)	7.5.2.2(h)	VID Unknowns	5
7.7 1 1(1)	7.4.2.2(a)	Employ LINK 16/MIDS Secure Communications	20
7.7 1.1(j)	7.4.2 2(c)	Utilize C2 Directive and Descriptive Commentary	10
7 7.1.1(k)	7.4 2.1(e)	Utilize Lateral Mission Element Tactical Information	30
7.7.1 1(1)	7.5.2.2(1)	Employ AMIRS Search Sort and Target Contract	60
7.7 1 1(m)	7.2.7.1(g)	Interrogate Unknown Radar Contacts with IFF	15
7.7.1.1(n)	7.4.2.2(b)	Employ Have Quick II Secure Communications	20
7.7 1 1(o)	7.4.2.1(g)	Conduct Visual Lookout with NVG	7
7.7.1.1(p)	7.5.2.2(p)	VID Unknowns with NVG	7
7.7.2.1(a)	7.7.2.1(a)	Manoeuvre the Tactical Formation	999
7 7.2.1(b)	7.7.2.1(b)	Avoid Illuminating of the Enemy Air RWR	5
7.7.2.1(c)	7.7.2.1(c)	Configure the Tactical Formation	45
7.7.2.1(d)	7.7.2.1(d)	Establish Diverging Paths	10
7.7 2.1(e)	7.7.2.1(e)	React Aggressively to Enemy Air Manoeuvre	5
7.7.2.1(f)	7.7.2.1(f)	Limit Exposure Using Terrain Masking	300
7.7 2.1(g)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10
7 7.2.1(h)	7.5 2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	30
7.7.2.2(a)	7.5 2.3(a)	Employ Tactical Deception	999
7.7 2 2(b)	7 5 2.3(b)	Dispense Chaff	3
7.7.2.2(c)	7.5.2.3(c)	Employ Jammers	15
7 7.2 2(d)	7.5.2.3(d)	Employ BVR Deception Tactics	300
7.7.2.3(a)	7.5.2 4(a)	Manoeuvre/Expose the Tactical Formation	30
7.7.2.3(b)	7.5.2.4(b)	Illuminate Enemy Air RWR	3
7.7.2.3(c)	7.5.2.4(c)	Enhance Enemy Air Radar Acquisition	20
7 7.2.3(d)	7.5.2.4(d)	Draw Enemy Air Away	300
7 7.2.3(e)	7.5.2.4(e)	Negate Enemy Air Weapons Employment	20
7.7.2.4(a)	7 5 2.5(a)	Deny Enemy Air Weapons Solution	999
7 7.2.4(b)	7 5.2.5(b)	Negate Enemy Air Weapons Employment	30
7.7.2.4(c)	7 5.2.5(c)	Employ Air-to-Air RMD	120
7.7.2 4(d)	7.5 2.5(d)	Employ Air-to-Air IRMD	60

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7 7.2.4(e)	7.5.2.5(e)	Employ AAGD	45
772.4(f)	7 5.2.5(f)	Egress Engagement Safely	20
7.7.2.4(g)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10
7.7 2 4(h)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	30
7.7 3 1(a)	7.5.2 3(a)	Employ Tactical Deception	999
7.7.3.1(b)	7.5.2.3(b)	Dispense Chaff	3
7.7 3 1(c)	7.5.2.3(c)	Employ Jammers	15
7.7 3 1(d)	7.5.2.3(d)	Employ BVR Deception Tactics	300
7.7.3.2(a)	7.5.2.6(a)	Manoeuvre Aircraft to Intercept Enemy	300
7.7.3.2(b)	7.5.2.5(b)	Negate Enemy Air Weapons Employment	30
7.7.3.2(c)	7.5.2.5(a)	Deny Enemy Air Weapons Solution	999
7.7.3.3(a)	7.5.2.4(a)	Manoeuvre/Expose the Tactical Formation	30
7.7.3.3(b)	7.5.2.4(b)	Illuminate Enemy Air RWR	3
7.7.3.3(c)	7.5.2.4(c)	Enhance Enemy Air Radar Acquisition	20
7 7.3 3(d)	7.5.2.4(d)	Draw Enemy Aır Away	300
7 7.3.3(e)	7.5.2.4(e)	Negate Enemy Air Weapons Employment	20
7.7.3.5(a)	7.5.2.7(a)	Manoeuvre to a Weapons Engagement Zone	60
7 7.3.5(b)	7.2.2.1(g)	Validate Weapons Solution Display	2
7 7.3.5(c)	7.5.2.7(c)	Employ Weapons	10
7 7.3.5(d)	7.5.2.7(d)	Maintain Post Attack Offensive	60
7.7.3.5(e)	7 5 2.5(f)	Egress Engagement Safely	20
7 7.3.5(f)	7.5.2.7(f)	Assess Post Merge ACM Options	30
7.7.3.5(g)	7.5.2.7(g)	Monitor Weapon Fly Out	50
7 7.3.6(a)	7.5.2.5(a)	Deny Enemy Air Weapons Solution	999
773.6(b)	7 5 2.5(b)	Negate Enemy Air Weapons Employment	30
7736(c)	7 5 2.5(c)	Employ Air-to-Air RMD	120
7.7 3.6(d)	7.5.2.5(d)	Employ Air-to-Air IRMD	60
7.7.3.6(e)	7.5.2.5(e)	Employ AAGD	45
7.7 3.6(f)	7.5.2.5(f)	Egress Engagement Safely	20
7.7.3.6(g)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10

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Goal ID	Source Goal	Goal Label	Goal Completion Time (s)
7.7 3.6(h)	7.5.2 2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	30
7 7.3.6(1)	7.7.3.6(i)	Jettison External Stores	3
7.7.4.1(a)	7.4.2.1(a)	Conduct Visual Lookout	5
7.7 4.1(b)	7.4.2.1(b)	Respond to displayed RWR Threat Emission Information	10
7.7.4.1(c)	7.5.2.2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	30
7.7.4 1(d)	7 4.2.1(g)	Conduct Visual Lookout with NVG	7
7.7.4 1(e)	7.5.2.2(f)	Advise on Visually Acquired SAM/AAA	5
7.7.5.1(a)	7.7 5.1(a)	Employ High Speed Flight	999
7.7.5.1(b)	7.7 5.1(b)	Employ Low Speed Flight	999
7.7.5.1(c)	7.7.5.1(c)	Avoid Threat Envelopes	15
7.7.5.1(d)	7.2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Displa	ays 5
7.7 5 2(a)	7.4.2.1(b)	Analyse displayed RWR Threat Emission Information	10
7.7.5.2(b)	7.5.2.3(c)	Employ Jammers	15
7.7 5.2(c)	7.5.2.3(b)	Dispense Chaff	3
7 7.5.3(a)	7.7.2.1(f)	Limit Exposure Using Terrain Masking	300
7.7.5.3(b)	7.7.5.3(b)	Employ Atmospheric Phenomena	60
7.7.6.1(a)	7.5 2.3(c)	Employ Jammers	15
7.7.6.1(b)	7 7.6.1(b)	Employ Defensive Counter Measures	60
7.7 6 2(a)	7.7.2.1(f)	Limit Exposure Using Terrain Masking	300
7.7.6.2(b)	7.7.5.3(b)	Employ Atmospheric Phenomena	60
7.7 6.3(a)	7.7.6.3(a)	Employ Surface-to-Air RMD	60
7.7.6 3(b)	7.7.6.3(b)	Employ Surface-to-AIr IRMD	60
7.7.6 3(c)	7.5 2.5(e)	Employ AAAD	45
7.7.6 3(d)	7.7.3.6(i)	Jettison External Stores	3
7.7.6 4(a)	7.2.2.1(a)	Conduct A/G Check	15
7.7.6.4(b)	7.2.2.1(b)	Identify Initial Point Visually	5
776.4(c)	7.2 2 1(c)	Designate/Add Offset at Initial Point	25
7 7.6.4(d)	7.2 2.1(d)	Manoeuvre to Weapons Delivery Parameters	30
7.7.6.4(e)	7 2.2.1(b)	Identify Target/DMPI Visually	5
7.7.6.4(f)	7.2.2.1(f)	Conduct Element Split Attacks	70

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Goal ID	Source Goal	Goal Label C	Goal Completion Time (s)
7 7.6.4(g)	7 2.2.1(g)	Validate Weapons Solution Display	2
7.7.6 4(h)	7 2.2.1(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)	3
776.4(I)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre	15
776.4(J)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre	15
7.7 6.4(k)	7.2.2.1(k)	Conduct BDA	5
7.7.6.4(l)	7.2.2.1(1)	Conduct Coordinated Attacks with Other Aircraft/Elements/Sect	tions 120
776.4(m)	7 2.2.1(m)	Monitor Target Area Tactical Picture on LINK 16/MIDS Display	ys 5
7.7.6 4(n)	7.2.2.2(b)	Designate Target Position	25
7.7.6.4(o)	7.2.2.2(c)	Identify Target Area with Aircraft Sensors	10
7.7.6.4(p)	7.2 2.2(e)	Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	10
7.7 6 4(q)	7.2.2.2(g)	Deliver PGM (LGB/MAV/Adv PGM)	5
7.7.6.4(r)	7.2.2.2(h)	Conduct Self-Lasing LGB Delivery	50
7.7.6.4(s)	7.2.2.2(i)	Conduct Buddy-Lasing LGB Delivery	50
7.7.6.4(t)	7.2.2.2(J)	Update Target Designation	40
7 7.6.4(u)	7.2.2.1(i)	Conduct Safe Escape Manoeuvre	15
7.7.6.4(v)	7.2.2.1(n)	Search for Initial Point	10
7.7.6.4(w)	7.2.2.1(o)	Search for Target	4
7.7.6.4(x)	7.2.2.1(p)	Identify Initial Point with NVG	5
7.7.6 4(y)	7.2.2.1(p)	Identify Target/DMPI with NVG	5
7.7.6.4(z)	7.2.2.1(j)	Conduct Frag Avoidance Manoeuvre	15
7.8.1 1(a)	7.8.1.1(a)	Monitor Common Secure Voice Frequencies	999
7.8.1.1(b)	7.8 1.1(a)	Monitor Discreet Voice Frequencies	999
7.8 1 1(c)	7.8.1.1(c)	Monitor Broadcast Frequencies	999
7.8.2 1(a)	7.8.1.1(a)	Monitor Secure Voice Frequencies	999
7.8.2.1(b)	7 8.1.1(a)	Monitor Broadcast Frequencies	999
7.8.2.1(c)	7.8.1.1(c)	Monitor Broadcast Frequencies	999
7.8.3 1(b)	7.8 3.1(b)	Monitor Secure LINK 16 Frequencies	999
7.8.4.1(a)	7.8.1.1(a)	Monitor UHF Guard Frequency and Monitoring Mode	999
7.8.4.1(b)	7.8.1.1(a)	Monitor AM/FM Guard Frequency and Monitoring Mode	999
7.9.1 1(a)	7.9.1.1(a)	Monitor and Manage Tank Pressurization and Vent System	999

Goal ID	Source Goal	Goal Label C	Goal Completion Time (s)
7.9.1.1(b)	7.9.1.1(b)	Monitor and Manage Fuel Quantity Indicating System	999
7.9.1.1(c)	7.9.1.1(c)	Monitor and Manage Fuel Feed Transfer	999
7.9.1 1(d)	7.9.1 1(d)	Monitor and Compare Fuel Flow Indications	999
7.9.1.1(e)	7.9.1.1(e)	Monitor and Manage Feed Tank Level	999
7 9.1.1(f)	791.1(f)	Monitor and Manage Fuel LO Indication	999
7 9.1.1(g)	7.9 1.1(g)	Monitor and Manage Bingo Fuel	999
7 9.1.1(h)	7.9.1.1(h)	Monitor and Manage Tactical Fuel	999
7 9 10.1(a)	7.9.10.1(a)	Monitor and Manage EGI Equipment	999
7.9.10.1(b)	7.9.10.1(b)	Monitor and Manage Navigation Aid Equipment	999
7.9.11.1(a)	7.9.11.1(a)	Monitor and Manage Radar	999
7.9 11.1(b)	7.9.11.1(b)	Monitor and Manage Jammers	999
7911.1(d)	7.9.11.1(d)	Monitor and Manage RWR	999
7.9.11.1(e)	7.9.11.1(e)	Monitor and Manage AN/ALE-47	999
7.9.11.1(f)	7.9.11.1(f)	Monitor and Manage IFF Interrogator/Transponder (CIT)	999
7.9.11 1(g)	7.9.11.1(g)	Monitor and Manage LINK 16/MIDS	999
7.9.11.1(1)	7.9 11.1(1)	Monitor and Manage Stores Management Set	999
7.9.11.1(j)	7.9.11.1(j)	Monitor and Manage Weapons	999
7.9.11 1(k)	7.9.11.1(k)	Monitor and Manage Have Quick II	999
7.9 11.1(l)	7.9 11.1(l)	Monitor and Manage NVIS	999
7.9.12.1(a)	7.9.12.1(a)	Monitor and Manage Standard Exterior Lighting	999
7912.1(b)	7.9.12.1(b)	Monitor and Manage Standard Interior Lighting	999
7.9.12.1(c)	7.9.12.1(c)	Monitor and Manage NVG Modified Exterior Lighting	999
7.9 12.1(d)	7.9.12.1(d)	Monitor and Manage NVG Modified Interior Lighting	999
7.9.13.1(a)	7.9.13.1(a)	Monitor and Manage Landing Gear System	999
79131(b)	7.9.13.1(b)	Monitor and Manage Brake System	999
7.9 13 1(c)	7.9.13.1(c)	Monitor and Manage Arresting Hook System	999
7 9.2.1(a)	7.9 2.1(a)	Monitor Hydraulic 1 and 2 Pump Pressure Indicators and Reserv	oirs 999
7.9.2.1(b)	7.9.2.1(b)	Monitor and Manage APU and Brake Accumulators	999
7.9.3 1(a)	7.9.3.1(a)	Monitor and Manage Engine Performance	999
7.9.3.1(b)	7.9.3.1(b)	Monitor and Manage Throttle Controls	999

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Goal ID	Source Goal	Goal Label Go	oal Completion Time (s)
7 9.3.1(c)	7.9.3.1(c)	Monitor and Manage Engine Anti-Ice System	999
7.9.3.1(d)	7.9.3.1(d)	Monitor and Manage Automatic Throttle Control (ATC)	999
7931(e)	793.1(e)	Monitor Inspection of Inlet Duct Doors	999
7.9.3.1(f)	7.9.3.1(f)	Monitor and Manage Secondary Power Systems	999
7.9.4 1(a).	7.9.4 1(a).	Monitor and Manage Electrical Circuit Breakers	999
7.9.4.1(b)	7.9.4.1(b)	Monitor and Manage Generators	999
7.9 4 1(c)	7.9.4.1(c)	Monitor and Manage Transformer Rectifiers	999
794.1(d)	7.9.4.1(d)	Monitor and Manage Batteries	999
7 9.5.1(a)	7.9.5.1(a)	Monitor and Manage Pılot Controls	999
7.9.5.1(b)	7.9.5.1(b)	Monitor and Manage Primary Flight Controls	999
7 9.5.1(c)	7.9 5.1(c)	Monitor and Manage Secondary Flight Controls	999
7.9.5.1(d)	7.9.5.1(d)	Monitor and Manage FCS Status Display	999
7.9.5.1(e)	7.9.5.1(e)	Monitor and Manage Departure Warning Tone	999
7.9.5.1(f)	7.9.5.1(f)	Monitor and Manage Spin Recovery System	999
7.9 5 1(g)	7.9.5.1(g)	Monitor and Manage Control Augmentation System	999
7 9.5.1(h)	7.9.5.1(h)	Monitor and Manage Flight Control Computers (FCC)	999
7 9.5.1(i)	7.9 5.1(1)	Monitor and Manage CAS Backup Systems	999
7.9.5.1(J)	7.9.5 1(J)	Monitor and Manage Wing Fold System	999
7.9.5.1(k)	7.9.5.1(k)	Monitor and Manage Automatic Flight Control System	999
7.9.6.1(a)	7.9.6.1(a)	Monitor and Manage Warning/Caution/Advisory Lights and Disp	999 yaya yaya yaya yaya yaya yaya yaya
7.9.6.1(b)	7.9.6.1(b)	Monitor and Manage Master Caution Light and Tone	999
7 9.6.1(c)	7.9.6.1(c)	Monitor Voice Alert System	999
7.9.6.1(d)	7.9.6.1(d)	Monitor and Manage GPWS	999
7.9.6 1(e)	7.9.6.1(e)	Monitor and Manage Fire Detection/Extinguishing System	999
7 9.6.1(f)	7.9.6.1(f)	Monitor and Manage Canopy System	999
7.9.6.1(g)	7 9.6.1(g)	Monitor and Manage Ejection Seat System	999
7.9.6.1(h)	7 9.6.1(h)	Monitor and Manage Life Support Systems	999
7.9.7.1(a)	7.9 7 1(a)	Monitor and Manage Bleed Air Systems	999
7.9.7.1(b)	7 9.7.1(b)	Monitor and Manage Windshield Anti-Ice and Rain Removal Sys	ten 999
7.9.7.1(c)	7.9.7.1(c)	Monitor and Manage Avionics Cooling and Pressurization	999

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Goal ID	Source Goal	Goal Label (Goal Completion Time (s)
7.9 7 1(d)	7.9.7.1(d)	Monitor and Manage Cockpit Air-Conditioning and Pressurizati	on 999
7.9.8.1(a)	7.9.8.1(a)	Monitor and Manage Pitot Static System	999
7.9 8 1(b)	7.9.8.1(b)	Monitor and Manage Standby Instruments	999
7.9 8 1(c)	7 9.8.1(c)	Monitor and Manage Radar Altımeter	999
7.9 8.1(d)	7.9 8 1(d)	Monitor and Manage AOA Indexer	999
7.9 8 1(e)	7.9.8 1(e)	Monitor and Manage Clock	999
7.9.9.1(a)	7.9 9 1(a)	Monitor and Manage Mission Computer System	999
7.9 9.1(b)	7.9.9.1(b)	Monitor and Manage Cockpit Controls and Displays	999
7.9.9.1(c)	7.9.9.1(c)	Monitor and Manage UFC	999
7.9.9 7(d)	7.9 9.7(d)	Monitor and Manage CVRS	999
7.9 9 7(e)	7.9.9.7(e)	Monitor and Manage Digital Displays VRS	999

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Annex G

Goal Criticality

CR 2001-072

Goal ID	Goal Label	TCR ATCR	Results
7 1 1 1(a)	Identify TRP	7 7	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 1 1 1(b)	Conduct TRP Hold	5	This task has moderate potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 1 1(c)	Search for TRP	S S	This task has moderate potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7.1.1 2(a)	Establish Radar Contact with Other Mission Elements	7 8	This task has high potential to adversely affect Efficiency if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 1 2(b)	Establish Communications with Other Mission Elements	×	This task has high potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 1 2(c)	Establish Communications with Controlling Agency	×	This task has high potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 1 2(d)	Get Tactical Update and Area Brief	10 10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 1 1 2(c)	Confirm Friendly Force and Adversary Disposition on LINK 16/MIDS	10 10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 1 2(f)	Establish Visual Contact with Other Mission Elements	Т Т	This task has high potential to adversely affect Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 1 2(g)	Establish AMIRS Contact with Other Mission Elements	6 7	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 1 2(h)	Establish NVG Contact with Other Mission Elements	8	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement

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Goal ID	Goal Label	TCR	ATCR	Results
7 I I 3(c)	Conduct Formation Join-up	S	S	This task has moderate potential to adversely affect Safety, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 1 3(d)	Confirm Formation Position on LINK 16/MIDS Tactical Displays	٢	œ	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 2.1(e)	Get Initial Target Brief	6	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 4 1(c)	Conduct Weapons Check-In with Controlling Agency	Ś	б	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7141(f)	Confirm Positive Radar Identification by Naval Controlling Agency	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 4 2(e)	Establish Radar Contact with Naval Ships	S	Q	Thus task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of thus task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 4 2(f)	Deploy to CAP	S	Ś	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 l 4 2(g)	Establish Visual Contact with Naval Ships	Ś	Ś	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 4 2(1)	Establish AMIRS Contact with Naval Ships	ę	4	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 4 2(l)	Establish NVG Contact with Naval Ships	٢	×	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 I 5 1(b)	Establish Radar Contact with AAR	\$	6	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 5 1(c)	Establish Communications with AAR	Ś	S	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.

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Goal ID	Goal Label	TCR A	ATCR	Results
7 1 5 1(d)	Conduct Pre AAR RV Checks	ñ	ŝ	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Reliability if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 5 1(e)	Establish Visual Contact with AAR	٢	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 5 1(f)	Establish AMIRS Contact With AAR	Ś	Ó	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 1 5 1(g)	Establish NVG Contact with AAR	10	01	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 5 2(a)	Conduct AAR Sensors to Visual Intercept	Ś	Ś	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 I 5 2(b)	Adopt AAR Towline Waiting Position	Ś	\$	Thus task has moderate potentual to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 5 2(c)	Join In Echelon Position	S	Ś	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 5 2(d)	Position Astern AAR Hoses	S	S	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 1 5 2(c)	Conduct Pre-Contact AAR Checks	ŝ	ñ	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Reliability if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 1 5 2(f)	Conduct AAR Sensors to NVG Intercept	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 1 1(a)	Reduce Aırcraft Emissions (EMCON Procedures)	S	S	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 1 1(b)	Ingress at Low Altitude (Sophisticated Environment)	10	10	This task has high potential to adversely affect Safety if improperly performed. The domands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement

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Goal ID	Goal Label	TCR	ATCR	Results
7211(c)	Ingress at Medium/High Altitude (Permissive Environment)	٢	7	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7211(d)	Descend to Low Altitude (Sophisticated Environment)	01	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 1 1(e)	Adjust to Medium/High Altitude (Permissive Environment)	ŝ	m	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7221(a)	Conduct A/G Check	7	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7221(b)	ldentify Initial Point Visually	7	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 2 1(c)	Designate/Add Offset at Initial Point	s	Ŷ	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 2 2 1(d)	Manoeuvre to Weapons Delivery Parameters	Ś	ŷ	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7221(f)	Conduct Element Split Attacks	×	×	This task has high potential to adversely affect Safety, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7221(g)	Validate Weapons Solution Display	10	10	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7221(h)	Deliver GP Weapons(Bombs/Rx/Cluster/Gx)	01	10	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 2 1(1)	Conduct Safe Escape Manocuvre	01	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7221()	Conduct Frag Avoidance Manoeuvre	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.

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Goal ID	Goal ID Goal Label	TCR	ATCR	Results
7221(k)	7 2 2 1(k) Conduct BDA	10	10	This task has high potential to adversely affect Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7221()	Conduct Coordinated Attacks with Other Aircraft/Elements/Sections	٢	٢	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7221(m)	7.2.2.1(m) Monitor Target Area Tactical Picture on LINK 16/MIDS Displays	10	10	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7221(n)	Search for Initial Point	Ś	S	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7221(0)	7 2 2 1(o) Scarch for Target	01	10	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7221(p)	Identify Initial Point with NVG	Ś	ę	This task has moderate potential to adversely affect Safety. Efficiency if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 2 2(b)	Designate Target Position	٢	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
(0) (C C C L	7 2 2 2 (a) Idout for Torrot A manual A manual Concerned	t	c	

of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement	This task has moderate potential to adversely affect Safety, Efficiency if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task meets or exceeds human performance limits. Further analysis of this task is unlikely to result in improvement	This task has high potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.	This task has high potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
	10	Ś	10	ę	٢	×	œ	10	10	10
	10	Ś	10	Ś	L.	٢	٢	10	10	10
	(m) Monitor Target Area Tactical Picture on LINK 16/MIDS Displays	(n) Search for Initial Point	(o) Search for Target	(p) Identify Initial Point with NVG	(b) Dcsignate Target Position	(c) Identify Target Area with Aircraft Sensors	(e) Identify Target Using Map/Imagery/Onboard Sensors/LINK 16	(g) Deliver PGM (LGB/MAV/Adv PGM)	(h) Conduct Self-Lasing LGB Delivery	(i) Conduct Buddy-Lasing LGB Delivery
	7221(m)	7 2 2 1(n)	7 2 2 I (o)	7221(p)	7 2 2 2(b)	7 2 2 2(c)	7 2 2 2(e)	7 2 2 2(g)	7 2 2 2(h)	7 2 2 2(1)

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Goal ID	Goal Label	TCR	ATCR	Results
7 2 2 2(J)	Update Target Designation	٢	∞	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 3 2(b)	Egress at Low Altrtude	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 3 2(c)	Egress at Medium/High Altıtıde	c,	S	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 2 3 2(d)	Conduct Lame Duck Procedures	5	Ś	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7241(a)	Pass IFREP	7	٢	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 4 2(a)	Conduct BD Check	ς	m	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 4 2(b)	Conduct Fence Out Check	S	S	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7251(a)	Establish Tactical Roles - Tactical Leads and Wingmen	e	m	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7251(b)	Maintain Aircraft Control and Flight Position	S	Ś	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 5 1(c)	Execute Manocuvre Turns	Ś	Ś	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 2 5 2(a)	Optimize Formation for Tactical Situation	L	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 5 2(b)	Maintain Visual Mutual Support	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.

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Goal ID	• Goal Label	TCR A	ATCR	Results
7 2 5 2(c)	Maintain Positional Mutual Support	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 5 2(c)	Maintain Visual Mutual Support with NVG	01	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 5 2(f)	Communicate with Formation Members via Discreet Frequency	L	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 5 2(g)	Communicate with Formation Members via Data Link	٢	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7261(a)	Maintain Ground Track	Ś	S	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 1(b)	Adhere to ACO	6	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 1(c)	Adjust G/S to Make Tasking Timings	٢	7	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7261(d)	Monitor and Avoid ACO Restricted Areas	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 6 2(a)	Navigate Using Visual References	S	Ś	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 6 2(b)	Navigate Using Sensors Information Displayed on HSD and DDIs	Ś	9	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 2(c)	Perform Navigation Systems Designations/Updates	ε	m	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 2(d)	Employ Watch Map Ground Technique	ŝ	m	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement

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Goal ID	Goal Label	TCR	ATCR	Results
7 2 6 2(c)	Arrivc at Target at Predetermined TOT	×	∞	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 2(f)	Navigate Using NVG Visual References	L	80	This task has high potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 3(a)	Monitor and Avoid Weather	œ	×	This task has high potential to adversely affect Safety, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 3(b)	Monitor and Avoid Obstacles	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 3(c)	Monitor and Avoid Terrain	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 6 3(e)	Monitor and Avoid Other Aircraft	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7271(a)	Monitor and Maintain Assigned Radar Sensor Search Parameters	Ŷ	9	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7271(b)	Monitor and Maintain Radar Contact with Formation Members	٢	œ	This task has high potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 7 1(c)	Monitor and Maintain Radar Contact with Lateral Mission Elements	S	Q	This task has moderate potential to adversely affect Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 7 1(d)	Monitor and Maintain Radar Contact with Unknowns	٢	×	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
7271(e)	Advise on Radar Acquired Unknowns	٢	80	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 2 7 1(f)	Radar Sort Multiple Unknown Contacts	Ś	ę	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.

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Goal ID	Goal Label	TCR	ATCR	Results
7 2 7 1(g)	Interrogate Unknown Radar Contacts with IFF	6	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7271(h)	Monitor Tactical Picture on LINK 16/MIDS Displays	~	6	This task has high potential to adversely affect Safety, Efficiency if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 7 2(a)	Monitor and Maintain Assigned AMIRS Search Parameters	5	6	This task has moderate potential to adversely affect Mission Effectivences/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 7 2(b)	Monitor and Maintain AMIRS Contact with Formation Members	S	ę	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 7 2(c)	Monitor and Maintain AMIRS Contact with Lateral Mission Elements	ñ	4	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 7.2(d)	Monitor and Maintain AMIRS Contact with Unknowns	Ś	9	This task has moderate potential to adversely affiet Safety, Efficiency if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 7 2(c)	Advise on AMIRS Acquired Unknowns	9	L	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 7 2(f)	Sort Multiple Unknown Contacts with AMIRS	s	9	Thus task has moderate potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 7 2(g)	Interrogate Unknown AMIRS Contacts with IFF	6	0	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7.2 7 3(a)	Maintain Visual Search Patterns	2	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7273(b)	Monitor and Maintain Visual Contact with Formation Members	Ś	S	This task has moderate potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 2 7 3(c)	Monttor and Maintain Visual Contact with Lateral Mission Elements	4	4	This task has moderate potential to adversely affect Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement

Goal ID	Goal Label	TCR	ATCR	Results
7 2 7 3(d)	Monitor and Maintain Visual Contact with Unknowns	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 7 3(c)	Advise on Visually Acquired Unknowns	7	٢	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 2 7 3(f)	Maintain NVG Visual Search Patterns	S	Q	This task has moderate potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits 1-urther analysis of this task is unlikely to result in improvement
7273(g)	Monitor and Maintain NVG Contact with Formation Members	×	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7273(h)	Monitor and Maintain NVG Contact with Lateral Mission Elements	ŝ	4	This task has slight potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
7273(1)	Monitor and Maintain NVG Contact with Unknowns	8	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7321(a)	Copy Target Brnef from FAC	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits F urther analysis of this task is unlikely to result in improvement
7321(b)	Read Back Mandatory litems to FAC	7	٢	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7321(c)	Enter Target Location in Aircraft database	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7321(e)	Communicate with FAC via DATA LINK 16	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 3 2 2(a)	Receive Target Description Brief from FAC	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 3 2 2(b)	Find Target Using Sensors	10	10	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement

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Goal ID	Goal Label	TCR A	ATCR	Results
7.3.2 2(c)	Find Target Visually	10	01	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 3 2 2(d)	Communicate Target Acquired	6	6	This task has high potential to adversely affect Safery, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 3 2 2(e)	Describe Target Area and Target to FAC	×	×	This task has high potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7.3 2 2(f)	Conduct Target Run in	٢	L	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7.3 2 2(h)	Find Target with NVG	10	10	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 4 2 l(a)	Conduct Visual Lookout	×	œ	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7421(b)	Respond to displayed RWR Threat Emission Information	L	œ	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 4 2 1(c)	Acquirc Encmy Targets on LINK 16/MIDS Displays	7	œ	This task has high potential to adversely affect Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 4 2 1(d)	Find Target with Radar Search Sort and Target Contract	S	9	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 4 2 l(c)	Utilize Lateral Mission Element Tactical Information	Ś	Ś	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 4 2 1(f)	Find Target with AMIRS Search Sort and Target Contract	S	ŝ	This task has moderate potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7421(g)	Conduct Visual Lookout with NVG	٢	×	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.

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Goal ID	Goal Label	TCR	ATCR	Results
7 4 2 2(a)	Report Target via LINK 16/MIDS Secure Communications	L	×	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 4 2 2(b)	Report Target via Have Quick II Secure Communications	L	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 4 2 2(c)	Utilize C2 Directive and Descriptive Commentary	9	9	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7.5 2 1(b)	Conduct CAP	S	S	This task has moderate potential to adversely affect Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 5 2 2(a)	Employ Radar Search Sort and Target Contract	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 5 2 2(d)	Initiate and Monitor EID of Unknowns	6	٢	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 5 2 2(e)	Advise on Approaching Threats	×	œ	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 5 2 2(f)	Advise on Visually Acquired Threats	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 5 2 2(g)	Acquire Enemy Contacts on LINK 16/MIDS Displays	7	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 5 2 2(h)	VID Unknowns	6	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7.5 2 2(1)	Employ AMIRS Scarch Sort and Target Contract	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 5 2 2(p)	VID Unknowns with NVG	6	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.

Goal ID	Goal Label	TCR A	ATCR	Results
7523(a)	Employ Tactical Deception	S	S,	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7523(b)	Dispense Chaff	S	9	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 5 2 3(c)	Employ Jammers	S	9	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 5 2 3(d)	Employ BVR Deception Tactics	S	S	This task has moderate potential to adversely affect Safety if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 5 2 4(a)	Manoeuvre/Expose the Tactical Formation	ŝ	٣	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 5 2 4(b)	Illuminate Enemy Air RWR	ε	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 5 2 4(c)	Enhance Enemy Air Radar Acquisition	ε	m	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 5 2 4(d)	Draw Enemy Air Away	٢	٢	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7.5 2 4(e)	Negate Enemy Air Weapons Employment	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 5 2 5(a)	Deny Enemy Air Weapons Solution	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 5 2 5(b)	Negate Enemy Air Weapons Employment	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 5 2 5(c)	Employ Aır-to-Aır RMD	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement

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Goal ID	Goal Label	TCR A	ATCR	Results
7 5 2 5(d)	Employ Aır-to-Aır IRMD	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7.5 2.5(c)	Employ AAGD	10	10	This task has high potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7.5 2 5(f)	Egress Engagement Safely	10	10	This task has high potential to adversely affect Safety if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 5 2 6(a)	Manocuvre Aircraft to Intercept Enemy	9	9	This task has moderate potential to adversely affect Safety. Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7.5 2 7(a)	Manoeuvre to a Weapons Engagement Zone	٢	L	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7.5 2 7(c)	Employ Wcapons	10	10	This task has high potential to adversely afficet Safety, Mission Effectiveness/Completion if improperity performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7.5 2 7(d)	Maintain Post Attack Offensive	×	×	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7527(f)	Assess Post Mcrge ACM Options	Ŷ	Ŷ	This task has moderate potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 5 2 7(g)	Monitor Weapon Fly Out	Ś	ŝ	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 6 2 1(a)	Generate Positive Closure	ñ	ю	This task has slight potential to adversely affect Safety, Mission Effectivencss/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 6 2 1(b)	Maintain Positive Closure	с.	ξ	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Cost if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 6 2 1(c)	Montor and Obey AAR Lights	ŝ	e	This task has slight potential to adversely affect Safety, Mission Effectivencss/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in unprovement

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Goal ID	Goal Label	TCR	ATCR	Results
7 6 2 2(a)	Position Pitch Ladders	ŝ	3	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 6 2 2(b)	Align Probe	ς.	ς	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 6 2 3(a)	Pick Approach Reference	£	n	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 6 2 3(b)	Maintain Attitude References	ŝ	ñ	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 6 2 3(c)	Make Contact	٢	L	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 6 3 1(a)	Generate Maximum Fuel Transfer	-	-	This task has slight potential to adversely affect if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 6 3 3(a)	Generate Negative Closure	ñ	ñ	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 6 3 3(c)	Move to Astern Position	ŝ	ñ	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 6 3 3(e)	Move to Outboard / Echelon Position	S	Ś	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 6 4 1(a)	Establish Departure Echelon Position	Ś	ŝ	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 6 4 1(b)	Request Clearance to Depart	ę	ŝ	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 6 4 1(c)	Depart	Ś	Ś	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.

Goal ID	Goal Label	TCR ATCR	CR Results
7 7 2 1(a)	Manoeuvre the Tactıcal Formation	Ś	5 This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7721(b)	Avoid Illuminating of the Enemy Air RWR	œ	8 This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 7 2 1(c)	Configure the Tactical Formation	×	8 Thus task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7.7 2 1(d)	Establish Diverging Paths	m	3 This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 7 2 1(e)	React Aggressively to Enemy Air Manoeuvre	٢	7 This task has high potential to adversely affect Safety if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7721(f)	Lımıt Exposure Usıng Terraın Maskıng	٢	7 This task has high potential to adversely affect Safety if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 7 3 6(1)	Jettison External Stores	٢	8 This task has high potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 7 5 1(a)	Employ High Speed Flight	7	7 This task has high potential to adversely affect Safety if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7751(b)	Employ Low Speed Flight	7	7 This task has high potential to adversely affect Safety if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7.7 5 1(c)	Avoid Threat Envelopes	10	10 This task has high potential to adversely affect Safety if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7.7 5 3(b)	Employ Atmospheric Phenomena	e	3 This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7761(b)	Employ Defensive Counter Measures	10	10 This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement

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Goal ID	Goal Label	TCR A1	ATCR	Results
7763(a)	Employ Surface-to-Air RMD	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7763(b)	Employ Surface-to-Air IRMD	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 8 1 1(a)	Monitor Common Secure Voice Frequencies	٢	7	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7811(c)	Monitor Broadcast Frequencies	٢	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7831(b)	Monttor Secure LINK 16 Frequencies	٢	L	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7911(a)	Monitor and Manage Tank Pressurization and Vent System	Ś	9	This task has moderate potential to adversely affect Safety, Reliability if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7911(b)	Monitor and Manage Fuel Quantity Indicating System	S	6	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7911(c)	Monitor and Manage Fuel Feed Transfer	Э	4	This task has slight potential to adversely affect Safety, Mission Effectivences/Completion, Cost if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 9 1 1(d)	Monttor and Compare Fuel Flow Indications	ε	ŝ	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Reliability, Cost if improperly performed The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7911(e)	Monitor and Manage Feed Tank Level	Ś	Q	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7911(f)	Monitor and Manage Fuel LO Indication	٢	7	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement
7911(g)	Monitor and Manage Bingo Fuel	×	∞	This task has high potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.

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Goal ID Goal Label	TCR	ATCR	Results
7 9 1 1(h) Monitor and Manage Tactical Fuel	L	٢	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 10 1(a) Monitor and Manage EGI Equipment	L	80	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 10.1(b) Monitor and Manage Navigation Aid Equipment	S	9	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 11 1(a) Monitor and Managc Radar	6	01	This task has high potential to adversely affect Safety, Mission Effectivencss/Completion, Efficiency if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 11 1(b) Montor and Manage Jammers	×	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 11 1(d) Monitor and Manage RWR	×	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 11 1(c) Monttor and Manage AN/ALE-47	œ	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7.9 11 1(f) Monitor and Manage IFF Interrogator/Transponder (CIT)	7	×	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7.9.11.1(g) Monitor and Manage LINK 16/MIDS	×	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 11 1(1) Monitor and Manage Stores Management Set	٢	œ	This task has high potential to adversely affect Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7.9 11 1(j) Monitor and Manage Wcapons	10	10	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 11 1(k) Monitor and Manage Have Quick II	×	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.

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Goal ID	Goal Label	TCR A	ATCR	Results
())1 11 6 L	Monttor and Manage NVIS	×	6	This task has high potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7.9 12 1(a)	7.9 12 1(a) Monttor and Manage Standard Exterior Lighting	ŝ	ŝ	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 12 1(b)) Monitor and Manage Standard Interior Lighting	e	ĸ	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 9 12 1(c)	Monitor and Manage NVG Modified Exterior Lighting	ŝ	ŝ	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 9 12 1(d)) Monitor and Manage NVG Modified Internor Lighting	e	£	This task has slight potential to adversely affect Safety. Mission Effectivencss/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 9 13 1(a)) Montor and Manage Landing Gear System	Ś	6	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
79131(b)) Monitor and Manage Brake System	Ś	Q	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 13 1(c)) Monitor and Manage Arresting Hook System	£	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 2 1(a)	Monitor Hydraulic 1 and 2 Pump Pressure Indicators and Reservoirs	S	ę	This task has moderate potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 2 1(b)	Monttor and Manage APU and Brake Accumulators	ε	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Reliability, Cost if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 3 1(a)	Monitor and Manage Engine Performance	٢	80	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7931(b)	Monitor and Manage Throttle Controls	ñ	4	This task has slight potential to adversely affect Safety, Mission Effectivencss/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement

Goal ID	Goal Label	TCR	ATCR	Results
7931(c)	Monitor and Manage Engine Anti-lee System	б	4	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7931(d)	Montor and Manage Automatic Throttle Control (ATC)	-	7	This task has slight potential to adversely affect if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
7931(e)	Monitor inspection of inlet Duct Doors	-	7	Thus task has slight potential to adversely affect if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7931(f)	Monttor and Manage Secondary Power Systems	Ś	9	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7941(a)	Monitor and Manage Electrical Circuit Breakers	ñ	ñ	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement.
7941(b)	Monitor and Manage Generators	Ś	ę	This task has moderate potential to adversely affect Safety, Reliability if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 4.1(c)	Monitor and Manage Transformer Rectifiers	£	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7941(d)	Monitor and Manage Batteries	ñ	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency, Rehability, Cost if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7951(a)	Monitor and Manage Pilot Controls	S	9	This task has moderate potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7951(b)	Monttor and Manage Primary Flight Controls	e	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency, Cost if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7951(c)	Monitor and Manage Secondary Flight Controls	e	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency, Cost if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7951(d)	Monitor and Manage FCS Status Display	e	4	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.

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Goal ID	Goal Label	TCR	ATCR	Results
7 9 5 1(e)	Monitor and Manage Departure Warning Tone	٢	×	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 5 1(f)	Monitor and Manage Spin Recovery System	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 5 1(g)	Monitor and Manage Control Augmentation System	ñ	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency, Reliability, Cost if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement
7 9 5 1(h)	Monttor and Manage Flight Control Computers (FCC)	ñ	4	This task has slight potential to adversely affect Safety, Mission Effectureness/Completion, Efficiency, Reliability, Cost if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7951(1)	Monitor and Manage CAS Backup Systems	ŝ	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency, Reliability, Cost if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 5 1(J)	Monitor and Manage Wing Fold System	б	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency, Reliability if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7951(k)	Monitor and Manage Automatic Flight Control System	ŝ	4	This task has slight potential to adversely affect Safety, Mission Effectivencess/Completion, Efficiency, Reliability, Cost if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7961(a)	Monitor and Manage Warning/Caution/Advisory Lights and Displays	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7961(b)	Monitor and Manage Master Caution Light and Tone	٢	2	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7961(c)	Monitor Voice Alert System	٢	٢	This task has high potential to adversely affect Safety if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7961(d)	Monitor and Manage GPWS	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7961(c)	Monitor and Manage Fire Detection/Extinguishing System	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement

Goal ID	Goal Label	TCR	ATCR	Results
7961(f)	Monitor and Manage Canopy System	Ś	9	This task has moderate potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
7961(g)	Monitor and Manage Ejection Seat System	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7961(h)	Montor and Manage Life Support Systems	10	10	This task has high potential to adversely affect Safety if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7971(a)	Monitor and Manage Bleed Air Systems	Ś	ę	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if unproperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7971(b)	Monitor and Manage Windshield Anti-lee and Rain Removal System	б	4	This task has slight potential to adversely affect Safety, Mission Effectiveness/Completion, Efficiency if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 7 1(c)	Monitor and Manage Avionics Cooling and Pressurization	Ś	Ŷ	Thus task has moderate potential to adversely affect Safety if improperly performed The demands of thus task approach human performance limits Further analysis of this task is unlikely to result in improvement.
(p)1 2 6 2	Monitor and Manage Cockpit Air-Conditioning and Pressurization	S	ę	This task has moderate potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7981(a)	Monitor and Manage Pitot Static System	S	ę	This task has moderate potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.
7 9 8 1(b)	Monitor and Manage Standby Instruments	б	4	Thus task has slight potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7981(c)	Monitor and Manage Radar Altimeter	Ś	Q	This task has moderate potential to adversely affect Safety if improperly performed The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7981(d)	Monitor and Manage AOA Indexer	-	7	This task has slight potential to adversely affect 1f improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7981(c)	Monitor and Manage Clock	ŝ	ю	This task has slight potential to adversely affect Mission Effectiveness/Completion, Reliability if improperly performed. The demands of this task do not approach human performance limits. Further analysis of this task is unlikely to result in improvement.

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Goal ID	Goal ID Goal Label	TCR	ATCR	TCR ATCR Results
7991(a)	7.9.9 1(a) Monitor and Manage Mission Computer System	Ś	9	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task approach human performance limits. Further analysis of this task is unlikely to result in improvement.
7 9 9 1(b)	7.9.9 1(b) Monitor and Manage Cockpit Controls and Displays	Ś	S	This task has moderate potential to adversely affect Safety, Mission Effectiveness/Completion if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 9 1(c)	7.9.9 I(c) Montor and Manage UFC	e	б	This task has slight potential to adversely affect Safety. Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task do not approach human performance limits Further analysis of this task is unlikely to result in improvement
(p) 1 9 7(d)	Monitor and Manage CVRS	£	4	This task has slight potential to adversely affect Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement
7 9 9 7(e)	Montor and Manage Digital Displays VRS	б	4	This task has slight potential to adversely affect Mission Effectiveness/Completion, Cost if improperly performed. The demands of this task approach human performance limits Further analysis of this task is unlikely to result in improvement.

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Annex H

Operational Sequence Diagrams

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Chart held at DRDKIM

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Annex I

PCT Goal Analysis Results

Annex I - CF18 Air to Ground	8 Air to Ground PCT Goal Analysis Results
IP Number 7.2.2 I(b) Goal: that the Initial Point is identified Viually	Goal ID: 7221(b) Source Goal: 7221(b)
Description: Look out and identify large features that help you to identify smaller features that make IP unique Identify IP visually as you over fly it. Compare the visual image with the pre-studied Map of the IP or with the memorized image of the features identifying the IP.	Operator:PilotCompletion Time: 5Priority:5Allowable Delay (K):1 5Interruptable:YesSheddable:YesResumable:NoShed If Late:No
Auditory Category: 0 None	Feeds Back to Higher Level Goal No KNOWLEDGE
	Declarative: Pattern recognition, key features to identify ground patterns visually
Initiating Conditions: the search for IP has been completed	Situational:
Initiating Actions: Identity teatures that will lead to IP identification Ending Conditions: The Initial Point is identified Visually Ending Actions: Stop attending to goal	Specific Initial Point features (e.g. terrain, large features surrounding IP, smaller unique IP features, weather, etc.) Aircraft altitude and speed
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS
0 None	Voice: 0 None
Psychomotor: 1 Simple Psychomotor: Memory: 1 Commit to memory (LTM and STM) Memory:	homotor: 1 Automatised, highly learned Memory: 5 Memonzation
External Influenced Variables None Output Interface: None	
JT/SENSATION	IIV
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays Audition: 0 Nonc Aud	Vision: 4 Spatial encoding, visual pattern recognition Audition: 0 None
Kinesthetic: ⁰ Nonc Kinesthetic:	etic: 0 None
Memory: 2.3 Spatially coded Internal Influenced Variables Belief that the Initial Point is Identified Input Interface: Surrounding Ground, Initial Point Map	Memory: 3 Spatial decoding

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Annex I - CF18 Air to Grou	nd PCT G	8 Air to Ground PCT Goal Analysis Results
IP Number 7.2.2 l(c) Goal: that the target steering information is available and displayed	Goal ID:	7 2 2 1(c) Source Goal: 7 2 2 1(c)
Description: Over fly designation First, ensure you are in NAV or A/G Master mode, then assign the TDC to the HSD Anticipate over fly of IP using external visual references Depress the TDC when you are accurately positioned over the point you want to designate If the wypt you have selected at the time happens to be an OAP (has offset data entered) then the MC assumes that you are coverhead the OAP and automatically adds the offset information to the designation This only takes place for an over fly designation. Confirm that the Target Wypt, distance and heading are displayed in the HUD and that they are accurate by moving the TDC assigned to the designation first NAV designate the IP (or Offset am point). With the TDC assigned to the desired display (Radar or the AMIRS), the designation is then adjusted by moving the TD diamond or the NAV stabilized display (Radar or the AMIRS).		Operator: Pilot Completion Time: 25 Priority: 4 Allowable Delay (K): 13 Difficulty (D) Interruptable: Yes Sheddable: No Resumable: No Sheddable: No Feeds Back to Higher Level Goal No
Auditory Category: 0 None External Cue: Not Applicable		<u>KNOWLEDGE</u> Declarative:
An		Equipment operating procedures Standard Operating procedures Designation procedures
Initiating Actions: Designation of the Initial Point Ending Conditions: Target steering information is available and displayed Ending Actions: Stop attending to goal		Situational: Mission requirements and objectives Specifies of the tactical situation (c g threat/friendly forces, weather, terrain, etc) Details of on-going or planned activities
<u>OUTPUT/BEHAVIOUR</u>	OGNITIVE/PE	COGNITIVE/PERCEPTUAL PROCESS
Voice: 0 None	Voice: 0 N	0 Nonc
Psychomotor: 1 1 Simple Psychomotor: Memory: 1 Commit to memory (LTM and STM)	Psychomotor: 1 / Memory: 5 N	 Automatised, highly learned Memorization
External Influenced Variables Target steering information activated and displayed Output Interface: HUD and HSD		
INPUT/SENSATION	COGNITIVE/	COGNITIVE/PERCEPTUAL PROCESS
Vision: 11 Text, Dtal Reading	Vision: 3 V	3 Verbal encoding
Audition: 0 None	Audition: 0 N	0 None
Ki		0 None
Memory: 2 3 Spatially coded Infernal Influenced Variables Belief (or visual companson with Map Information) that target information displays accurate steering/distance to the target Input Interface: HUD and HSD Information on MAP	Memory: 3 S tton displays accural	3 Spatial decoding urate steering/distance to the target

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Annex I - CF18 Air to Grou	nd PCT G	8 Air to Ground PCT Goal Analysis Results	ts
IP Number 7.2.2 1(d) Goal: that the aircraft is in the desired position to release weapons	Goal ID:	7 2.2 1(d)	Source Goal: 7221(d)
Description: Conduct attack type desired to get to optimal delivery parameters Level Attack, Curvilinear Attack, Pop Up	Operator:	or: Pilot	Completion Time: ³⁰
Attack, Curvi Pop Attack, and Loft/Toss The pull up is generally done by applying 3 G. smoothly and rapidly raising the nose to the desired climb angle	c Priority:	y: 3 Allowable Delay (K):	elay (K): Difficulty (D)
		Interruptable: No	Sheddable: No
Drive angle by placing the Litt vector on the AOD (ALM OFF Distance). Intee G is normally used through the turn. Anticipate Velocity vector approaching the AOD, and conduct an unloaded roll to wings level at the desired dive	É	Resumable: Not Applicable	Shed If Late: Not Applicable
angle Adjust Power to achieve and maintain the desired IAS/TAS Adjust dive angle to the desired delivery angle and		Feeds Back to Higher Level Goal	No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable		Decla	Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	vel ops	Aircra	Aurcraft operating procedures. Tactics Standard Operating procedures Amolicable orders, regulations and plans
Initiating Conditions: Designated distance/time from the target		_	
Initiating Actions: Manoeuver arreraft towards a weapons release solution		Situa	Situational:
Ending Conditions: Aircraft has achieved Weapons Delivery Parameters		Missic	Mission requirements and objectives Specifics of the tactical
Ending Actions: Maintain stable platform for weapons release		situati of on-	situation (c g threat/mendiy forces, weather, terrain, etc) Details of on-going or planned activities
OUTPUT/BEHAVIOUR 0	OGNITIVE/P	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice: 0	0 None	
Psychomotor: 1 2 Difficult but familiar Psyc	Psychomotor: 4	Spatial encoding	
Memory: 1 Commit to memory (LTM and STM)	Memory: 5	5 Mcmorization	
External Influenced Variables Ancraft position, altitude, attitude, heading, speed and g			
Output Interface: Auroraft controls and throttles, HUD			
INPUT/SENSATION	COGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	SS
Vision: 2 Perpheral	Vision: 1	1 Automatised, highly learned perception	ption
Audition: 0 Nonc	Audition: 0	0 None	
Kinesthetic: 11 Sımple stımulus Ki	Kinesthetic: 1	1 Automatised, highly learned perception	ption
Memory: 2.5 Complex operation	Memory: 5	5 Rccall	
Internal Influenced Variables Belief that the aircraft displayed parameters have achieved desired Weapons release parameters	apons release param	ctcrs	
Input Interface: HUD, Relative position to surrounding ground/terrain			

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			Annex I - CF18 Air to Ground PCT Goal Analysis Results	nd PCT	Goal Analy	sis Results
IP Number 7	7 2 2 1(c) C	Goal:	that the Initial Point is identified Viually	Goa	Goal ID: 7221(c)	Source Goal: 7221(b)
Description: Look out and identify large features tha visually as you over fly it Compare the image of the features identifying the IP	mntify large featur wer fly it Compt ures identifyung i	ures that h are the vi the IP	Description: Look out and identify large features that help you to identify smaller features that make IP unique Identify IP visually as you over fly it Compare the visual image with the pre-studied Map of the IP or with the memonzed image of the features identifying the IP		Operator: Pilot Priority: 5 Allowable Interruptable: Yes Resumable: No Feeds Back to Higher Level Goal	Completion Time: 5 Allowable Delay (K): 1 5 Difficulty (D) Sheddable: Yes Shed If Late: No Level Goal No
Auditory Category: External Cue: Cognitive Category: Initiating Conditions:	ory Category: 0 External Cue: N ive Category: 4 ig Conditions: the s	 None Not Applicable Spatial cncox search for IP ha 	Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: the search for IP has been completed.			<u>KNOWLEDGE</u> Declarative: Pattern recognition, key features to identify ground patterns visually
Initiating / Ending Con Ending /	itiating Actions: Identify features that w ling Conditions: The Initial Point is idei Ending Actions: Stop attending to goal.	tıfy fcatur Inıtıal Poı attending	Initiating Actions: Identify features that will lead to IP identification Ending Conditions: The Initial Point is identified Visually. Ending Actions: Stop attending to goal.			Situational: Specific Initial Point features (e.g. terrain, large features surrounding IP, smaller unique IP features, weather. ctc.) Aircraft altrude and speed
OUTP Voice:	OUTPUT/BEHAVIOUR	/IOUR		OGNITIVI Voice	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Psychomotor: Memory:		e ut to men	 1 Simple 1 Commit to memory (LTM and STM) 	Psychomotor: Memory:	 Automatised, highly learned Mcmorization 	hly learned
External Influenced Variables Output Interface: ^{None}	lenced Variab ace: None		Nonc			
<u>INPL</u> Vision:	Ě	TION n, spatial	SENSATION 12 Pattern, spatial relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recogn	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
Audition:			4	Audition:	0 None	
Kinesthetic: Memory:	0 None 2.3 Spatially coded	ully codec	Ki	Kinesthetic: Memory:	0 None 3 Spatial decoding	
Internal Influenced Variables Input Interface: Surrounding G	enced Variab. ce: Surrounding	2	ief that the Initial Point is Identified Initial Point Map			

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		Annex I - CF18 Air to Gro	und PC	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7	7 2 2 1(f) Goal:	al: that the aircraft is positioned at the required time spacing over the target to avoid FRAG		Goal ID: 722 1(f)	Source Goal: 7221(f)
While flying in transmission with the gapropropriet the appropriate the attack, having acl required separatis	tetteal formation, a tito lead Roll out (me or on a visual g neved the required m as lead is over fl	While flying in factical formation, at the pre-planned range from the target, wingmen perform an energy sustaining While flying in factical formation, at the pre-planned range from the target, wingmen perform an energy sustaining 90 degrees turn into lead Roll out on perpendicular track and maintain heading for the required time (5-20sec) At the appropriate time or on a visual ground reference, wingmen turn back towards the target and conduct their own attack, having achieved the required time separation from their leads Wingmen then cross check that they have the required separation as lead is over flying the target and adjust the run-in accordingly	taining sec) At Ir own have the	Operator: Pilot Priority: 4 Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 70 Allowable Delay (K): 1 3 Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
Auditory Category: External Cue: Cognitive Category: Initiating Conditions:	ă	 Tone or Simple Auditory Sign No Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Designated distance from the target. 	level ops	D	craf
Initiating / Ending Con Ending /	itiating Actions: Manocuvre arreraft to co ling Conditions: Aureraft has the required Ending Actions: Maintain timing spacing	Initiating Actions: Manocuvre aircraft to conduct element split Ending Conditions: Aircraft has the required tuning spacing to conduct target attack Ending Actions: Maintain timing spacing			Situational: Mission requirements and objectives Specifics of the tactical situation (c g threat/friendly forces, weather, terrain, ctc) Details of on-going or planned activities Type of weapons delivered
OUTP	OUTPUT/BEHAVIOUR		COGNIT	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Voice: Psychomotor:	0 Nonc 1 2 Difficult but familiar		Voice: Psychomotor:	0 None 4 Spatial encoding	
Memory:	1 Commit t	1 Commit to memory (LTM and STM)	Memory:	5 Mcmorization	
External Influ Output Interfi	enced Variable 1ce: Aurcraft con	External Influenced Variables Aircraft position, altitude, heading, speed Other formation Aircraft position and distance relative to own Output Interface: Aircraft controls and throttles, HUD, Link 16/MIDS display	position and c	listance relative to own	
<u>INPU</u> Vision:	<u>, T</u>	SENSATION 12 Pattern, spatial relatioship, tracking, graphic displays	COGNI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	PROCESS Il pattern recognition
Audition:	1 Tone or	1 Tone or sumple auditory signal	Audition:	: 1 Automatised, highly learned perception	amed perception
Kinesthetic: Memory:	0 None 24 Semantically coded		Kinesthetic: Memory:	0 None 3 Verbal decoding	
Internal Influ Input Interfac	Internal Influenced Variables Input Interface: HUD, Lnk 16/	Internal Influenced Variables Belief that the aircraft has achieved the desired timing spacing to conduct the attack Input Interface: HUD, Link 16/MIDS display Other Formation Aircraft position	nduct the attac	×	

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Annex I - CF18 Air to Ground	8 Air to Ground PCT Goal Analysis Results	ts
IP Number 7 2 2 1(g) Goal: that the weapons solution is validated for weapons release	Goal ID: 7221(g) S	Source Goal: 7221(g)
Description: Confirm visually on the HUD that all required delivery parameters have been attained for release Ensure that the proper weapon is selected and that the TDC is assigned to the appropriate display for delivery. Confirm visually on the HUD that the Master ARM is in the ARM position. Visually confirm that the desired release symbology is displayed and is valid for release. Confirm that the displayed aim point is on the DMPI (Desired Mean Point of Impact).		Completion Time: 2 lay (K): 12 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Aurcraft has achieved weapons release parameters and point of release is approaching	Feeds Back to Higher Level G	oal No <u>KNOWLEDGE</u> Declarative: Arrcraft operating procedures Tactics Standard Operating procedures Weapons operating procedures
Initiating Actions: Visually confirm weapon solution Ending Conditions: Weapons solution has been validated Ending Actions: Monitor weapons solution	Situa Missio situati weapo	Situational: Mission requirements and objectives. Specifics of the tactical situation (e g threat/friendly forces, weather, terrain, etc) Type of weapons delivered
OUTPUT/BEHAVIOUR Voice: 0 None	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	
0 None 1 Commut to memory (LTM and STM)		
External Influenced Variables Weapons release symbology Output Interface: HUD and Master Arm switch		
INPUT/SENSATION CC Vision: 1 1 Text, Dial Reading	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal encoding	S
Audition:0NoneAuKinesthetic:0NoneKinesthetic	Audition: 0 None Kinesthetic: 0 None	
Memory: 2.4 Semantically coded Mi Internal Influenced Variables Belief that the weapons solution displayed is valid for weapons release Input Interface: Input Interface: HUD HUD	Memory: 3 Verbal decoding	

Annex I - CF18 Air to Gro	Air to Ground PCT Goal Analysis Results	ts
IP Number 7221(h) Goal: that GP Weapons are delivered	Goal ID: 7221(h) S	Source Goal: 7221(h)
Description: Depress and hold the weapons release button (Ptckle button) on the stick Confirm that the weapons are being released Once all weapons have been released release Pickle button Confirm weapons release on the SMS page on the DDI	Operator: Pulot Priority: 2 Interruptable: No Resumable: Not Applic Feeds Back to Higher I	Completion Time: 3 Allowable Delay (K): 12 Difficulty (D) Sheddable: No able Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 Nonc External Cue: Not Applicable	Decla	KNOWLEDGE Declarative:
Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Weapons solution validated and aircraft is at release altitude and or range	Aircrai proced	Aircraft operating procedures Tactics Standard Operating procedures Weapons operating procedures
Initiating Actions: Monitor displayed release symbology Ending Conditions: All weapons have been released Ending Actions: Stop attending to goal	Situal Type o terrain,	Situational: Type of weapons released, weather conditions, visibility, winds, sun, terrain, target type
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice: 0 None	
Psychomotor: 1 1 Simple Psy Memory: 1 Commut to memory (LTM and STM) Psy	Psychomotor: 1 Automatised, highly learned Memory: 5 Memorization	
External Influenced Variables Weapons releasing from aircraft , Pickle button depression, Weapons release symbology Output Interface: HUD, DDI, HOTAS, Pickle button	cicase symbology	
INPUT/SENSATION Vision: 12 Pattern, spattal relatioship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	<u>SS</u> cognition
. 0 Nonc		
Kinesthetic: 1.1 Simple stimulus Mernory: 2.4 Semantically coded	Kinesthetic: I Automatised, highly learned perception Memory: 3 Verbal decoding	ption
Internal Influenced Variables Belief that the weapons have been delivered and that the symbology displays that fact Input Interface: HUD, DDI, Aircraft movement at weapons release,	splays that fact	

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		Annex I - CF18 Air to Gr	ound PCT	8 Air to Ground PCT Goal Analysis Results	sis Results
IP Number 72	7 2 2 1(1) Goal:	: that the Aircraft is recovered safely and misses the ground by the desired altitude		Goal ID: 7221(i)	Source Goal: 722 i(1)
At the appropriate achieve a 4-G pull angle is achieved arrspeed Cross cl	recovery altitude or l-up manoeuvre with to meet the clearance neek Baro or Radar	At the appropriate recovery altitude or when pull-up cue / breakaway X is displayed in the HUD, the pilot must achieve a 4-G pull-up manoeuvre within 1 5 seconds and hold the 4-G throughout the pullout until desired climb angle is achieved to meet the clearance eriteria. Adjust throttles to achieved and maintain desired recovery arrespeed. Cross check Baro or Radar altitude during recovery to ensure minimum altitude is not broken. Increase		Operator: Pilot Priority: 1 Interruptable: No	Completion Time: ¹⁵ Allowable Delay (K): Difficulty (D) Sheddable: No
G if required			Ret	Resumable: Not Applicable	cable Shed If Late: Not Applicable
			Fee	Feeds Back to Higher Level Goal	Level Goal No
Auditory Category:	tegory: 0 None	Jc			KNOWLEDGE
Extern	External Cue: Not Ap	Not Applicable			Declarative:
Cognitive Category:		5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	th level ops		Aircraft operating procedures Tactice Standard Operating procedures Recovery/pull up symbology
Initiating Con	ditions: Weapons	Initiating Conditions: Weapons release is completed and/or aircraft at minimum recovery altitude, whichever comes first	whichever comes fit	st	
Initiating A	ctions: Safe escap	Initiating Actions: Safe escape dive recovery initiated by pull up manoeuvre			Situational:
Ending Con	litions: Aurcraft is	Ending Conditions: Aurcraft is at a safe altitude from the ground in the desired climbing attitude			Minimum recovery altitude, terrain, slope, weather, visibility
Ending A	Ending Actions: Stop attending to goal	ding to goal			
OUTPI	OUTPUT/BEHAVIOUR		COGNITIVI	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice:	0 None		Voice:	0 None	
Psychomotor:	1 2 Difficult but familiar		Psychomotor:	4 Spatial encoding	
Memory:	1 Commit to r	1 Commut to memory (LTM and STM)	Memory:	5 Memorization	
External Influe	External Influenced Variables	Aurcraft position, altitude, attitude, heading, speed and g			
Output Interfa	ce: Aircraft contro	Output Interface: Aurcraft controls and throttles HUD, Safe escape auditory signals			
INPL	INPUT/SENSATION	ZI	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Vision:		1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding,	4 Spatial encoding, visual pattern recognition
Audition:	5 Speech inpu	Speech input (attended to, salient to the primary task)	Audition:	5 Verbal decoding, speech recognition	speech recognition
Kinesthetic:	1 1 Simple stimulus	nlus	Kinesthetic:	1 Automatised, higl	1 Automatised, highly learned perception
Memory:	2 4 Semantically coded	ly coded	Memory:	3 Verbal decoding	
Internal Influe	Internal Influenced Variables	Belief that the desired safe escape attitude and the altitude above ground are achieved	ground are achieved		
Input Interfac	2: HUD, Relation to	Input Interface: HUD, Relation to the ground, Safe escape auditory signals			

Annex I - CF18 Air to Grou	Ind PCT	8 Air to Ground PCT Goal Analysis Results	S
IP Number 7 2 2 1(1) Goal: that the aircraft avoids the weapon frag pattern	Goal ID:	7221()	Source Goal: 7221()
Description: Conduct turming safe escape manocuvre, climbing safe escape manoeuvre, level straight through safe escape manoeuvre or recovery above weapon frag altitude. At the appropriate frag avoidance recovery altitude or distance, the pilot must achieve the desired G pull-up manoeuvre within 1.5 seconds and hold the G throughout the pullout until desired climb angle or heading away from target is achieved to meet the Frag clearance criteria. Adjust throttles to achieved and maintain desired airspeed Cross check Baro, Radar altitude and range to target during avoidance is not bracken. Increase G if required airtude or distance is not bracken.		: Pilot 2 Allowable De able: No le: Not Applicable ck to Higher Level Goal	Completion Time: 15 lay (K): 1 1 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatrzed, highly learned (easy to do for a trained person) Initiating Conditions: Weapons release is completed and/or anreaft at minimum frag recovery altitude or range, whichever comes first.	or range, whichev		<u>KNOWLEDGE</u> Declarative: Aurcraft operating procedures Tactics Standard Operating procedures Frag avoidance manoeuvres procedures.
Initiating Actions: Manocuvre ancraft to conduct frag avoidance Ending Conditions: Aurcraft is at a safe distance from the weapons frag pattern Ending Actions: Stop attending to goal		Situational: Type of weap terrain, slope, range	Situational: Type of weapon released, weather conditions, visibility, winds, sun, terrain, slope, target type Minimum frag avoidance altitude and or range
OUTPUT/BEHAVIOUR Voice: 0 None	OGNITIVE Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	
Psychomotor: 1 2 Difficult but familiar Psyc Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	 4 Spatial encoding 5 Memorization 	
External Influenced Variables Aucraft position, altitude, attitude, heading, speed and g Weapons frag pattern Output Interface: HUD	ag pattern		
<u>INPUT/SENSATION</u> Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	<u>COGNITIV</u> Vision: Audition:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition Audition: 0 None	<u>SS</u> ognition
 1 Simple stimulus 2 4 Semantically coded 2 4 Semantically coded 2 6: HUD 	Kinesthetic: Memory: attern	 Automatised, highly learned perception Verbal decoding 	ttom

Interruptable Coal ID: 7.2 2 1(k) red from daivery, if desired the target BDA can be conducted by soluing from hit Visually assess the AMIRS display better interruptable: Ves Interruptable: Ves Resumable: No Feeds Back to Higher Level G Feeds Back to Higher Level G Feeds Back to Higher Level G Volce: Allowal bld noteding, pattern recognition (reading maps, giving directions) Priority: 8 Allowal bld vespon has impacted the target Noteding, pattern recognition (reading maps, giving directions) Priority: 8 Allowal bl recovered from attack and weapon has impacted the target Noteding, pattern recognition (reading maps, giving directions) Priority: 8 Allowal complete COGNITIVE/PERECEPTIVAL PRO None None consider Propriori: 0 None consolution: None None None consolution: Nemory: 5 None consolution: Nision: 4 5 consolution: Nision: 1 None consolution: Nision: 4 5 None consolution: Nision: 4 5 None consolution: Nision: 1 1 None consolution: Nision: 1 5 None contections Nision: <th>Annex I - CF18 Air to G</th> <th>round PCT</th> <th>8 Air to Ground PCT Goal Analysis Results</th> <th>sis Results</th>	Annex I - CF18 Air to G	round PCT	8 Air to Ground PCT Goal Analysis Results	sis Results
Internetion Operator: Pion impact point and domage resulting from thr. Vasably sacess the AMIRS display Deriority: 8 Allowal impact point and domage resulting from thr. Vasably sacess the AMIRS display Deriority: 8 Allowal impact point and domage resulting from thr. Vasably sacess the AMIRS display Deriority: 8 Allowal impact point and domage resulting from thr. Vasably sacess the AMIRS display Priority: 8 Allowal impact point and domage resulting from thr. Vasably sacess the AMIRS display Priority: 8 Allowal impact point and domage resulting from thr. Vasably sacess the AMIRS display Priority: 8 Allowal impact point and thread Impact matex and verspont has mpacted the target No No No infitions: Target BDA is complete Actions: No No No definions: Target BDA is complete No No No No No definions: Impact anget BDA No No No No No No definions: Impact anget BDA is complete No No No No No No	7 2 2 1(k) Goal:	Goal		Source Goal: 722 1(k)
ategory: 0 None and Cues: Not Applicable and Cues: Not Applicable ategory: 4 Spantal encoding, decoding, pattern recognition (reading maps, giving directions) attitions: Increat its safely recovered from attack and weapon has impacted the target Actions: Look at DDI attitions: Target BDA is complete Actions: Look at DDI attitions: Target BDA is complete Actions: Memoriz Actions: Memoriz attitions: Target BDA Currite HAVIOUR One None None One None One None Increased Variables None Commut to memory (LTM and STM) Memory: Actions: Synchronotor: actes: DDI, AMIRS display Commut to memory (LTM and STM) Memory: Actern, spatial relationship, tracking graphic display Vision: Actern, spatial relationship, tracking graphic display Memory: Increased None One Increased Nision:	Description: After ensuring that Aircraft is safely recovered from delivery, if desired the target BDA can be conducte assessing Bomb impact point and damage resulting from hit Visually assess the AMIRS display assessing Bomb impact point and damage resulting from hit visually assess the AMIRS display		rator: Pilot rity: 8 rruptable: Yes umable: No is Back to Higher	Completion Ti Delay (K): Sheddable: Y Shed If Late: N No
Actions: Look at DDI Inditions: Target BDA is complete Actions: Memorze target BDA Actions: Memorze target BDA UTT/BEHAVIOUR 0 None 0 None 0 None 0 None 1 Commut to memory (LTM and STM) Actions: Memory: Target BDA 1 Commut to memory (LTM and STM) Memory: S Memory: S Memory: None Incect Variables None Incect DDI, AMITS display Incect DDI, AMITS display Incect Variables None Incert Variables Incert Variables Incert Variables Incert Variables	Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spattal encoding, decoding, pattern recognition (reading maps, giving Initiating Conditions: Initiating Conditions: Ancraft is safely recovered from attack and weapon has impacted the target	directions)		target
UTTBEHAVIOUR COGNITIVE 0 None Voice: 0 None Psychomotor: 1 Commut to memory (LTM and STM) Psychomotor: memory Memory: in Commut to memory (LTM and STM) Memory: memory In Commut to memory (LTM and STM) memory Memory: in Commut to memory (LTM and STM) Memory: in 2 Pattern, spatial relationship, tracking, graphic displays Vision: in 12 Pattern, spatial relationship, tracking, graphic displays Vision: in 0 None Mone in 0 None Spatially coded in 12 Spatially coded Memory: in None Spatially coded in None Stantally coded in None Memory: in None Memory: in None Memory:	Initiating Actions: Look at DDI Ending Conditions: Target BDA is complete Ending Actions: Memorize target BDA			Situational: Target type and size, Weapons type, Weapons impact angle, weather, distance, AMIRS magnification
Indiit Infertace: DDI. AMIRS display	UTT/BEHAVIOU 0 None 0 None 1 Commt to tr 1 Commt to tr 2 C	COGNITIVE Voice: Psychomotor: Memory: Vision: Vision: Audition: Kinesthetic: Memory:	 <i>(PERCEPTUA)</i> 0 None 0 None 5 Memorization 5 Memorization 4 Spatial encoding, 0 None 0 None 3 Spatial decoding 	AL PROCESS AL PROCESS visual pattern recognition

Annex I - CF18 Air to G	round PCT	Air to Ground PCT Goal Analysis Results	desults
IP Number 7 2 2 1(n) Goal: that the area surrounding the IP and the IP are found visually		Goal ID: 7221(n)	Source Goal: 7221(n)
Description: Anticipate what the IP and surrounding area look like by reviewing the attack map visually or mentally When reviewing the map, recognize how your run-in ground track will bring you into and over the IP. Look out and search for large features that help you to identify smaller features that lead your eyes to the IP search for large features that help you to identify smaller features that lead your eyes to the IP.		Operator: Pilot Priority: 4 Allowable Interruptable: Yes Resumable: No Feeds Back to Higher Level Goal	Completion Time: ¹⁰ Allowable Delay (K): ¹⁶⁵ Difficulty (D) Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Specific range from the IP, within line of sight	(directions)		KNOWLEDGE Declarative: Visual search pattern technique Pattern recognition, keys features to find ground patterns visually
Initiating Actions: Conduct visual search pattern Ending Conditions: IP has been located. Ending Actions: Monitor IP position for Identification and designation			Situational: Specific Initial Point surrounding features (c g terrain, large features surrounding IP, smaller unique IP features, weather, etc)
OUTPUT/BEHAVIOUR Voice: 0 None Psychomotor: 1 1 Simple Memory: 1 Commut to memory (LTM and STM)	COGNITIV Voice: Psychomotor: Memory:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None ychomotor: 1 Automatised, highly learned Memory: 5 Memorization	DCESS
External Influenced Variables None Output Interface: None			
INPUT/SENSATION Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays Audition: 0 Nonc	<u>COGNITI</u> Vision: Audition:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition Audition: 0 None	ROCESS attern recognition
Kinesthetic:0 NoncMemory:2 3 Spatially codedInternal Influenced VariablesBclief that IP has been locatedInput Interface:Surrounding Ground, Initial Point Map	Kinesthetic: Memory:	0 Nonc 3 Spattal decoding	

		Annex I - CF18 Air to Grour	nd PCT	Air to Ground PCT Goal Analysis Results	esults
IP Number 72	7 2 2 1(o) Goal:	: that the area surrounding the target and the target are found visually		Goal ID: 7221(0)	Source Goal: 7221(0)
Description: Anticipate what th visually or mentall over the target Look out and searc Find DMPI	te target surrounding ly When reviewing ch for large features	Description: Anticipate what the target surrounding area look like by reviewing the target photos, Maps or data linked imagery visually or mentally When reviewing the target, recognize how your run-in ground track will bring you into and over the target Look out and search for large features that help you to identify smaller features that lead your eyes to the Target Find DMPI		Operator: Pilot Priority: 3 Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 4 Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable Level Goal No
Auditory Category: External Cue: Cognitive Category: Initiating Conditions:	0 Nc Speci	 None Not Applicable Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Specific range from the target, within line of sight, during pull up manocuvre. 	tions)		<u>KNOWLEDGE</u> Declarative: Visual search pattern technque Pattern recognition, key features to find ground patterns visually
Initiating A Ending Conc Ending A	Initiating Actions: Conduct visual search pattern Ending Conditions: Target has been located Ending Actions: Monitor Target position for Id	itiating Actions: Conduct visual search pattern ling Conditions: Target has been located Ending Actions: Monitor Target position for Identification.			Situational: Specific Target surrounding features (e.g. terraín, large features surrounding Target, smaller unique target features, weather, etc)
OUTPL Voice:	OUTPUT/BEHAVIOUR Voice: 0 None		OGNITIVI Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 Nonc	CESS
Psychomotor: Memory:	 Simple Commit to n 	I Simple Psych 1 Commut to memory (LTM and STM) N	Psychomotor: Memory:	1 Automattscd, highly learned 5 Memorization	-
External Influence Output Interface:	External Influenced Variables Output Interface: ^{None}	None			
<u>INPU</u> Vision:	INPUT/SENSATION sion: 12 Pattern, spat	al relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	OCESS tem recognition
Audition: Kinesthetic:	0 None 0 None	Kin	Audition: Kinesthetic:	0 None 0 None	
Memory: Internal Influe: Input Interface	Memory: 2.3 Spatially coded Internal Influenced Variables Bcl Input Interface: Surrounding Ground	icf that Target has been located and target features	Memory:	3 Spatial decoding	

Annex I - CF18 Air to Groun	8 Air to Ground PCT Goal Analysis Results	lysis Results
IP Number 7.2.2 (b) Goal: that the target is designated and that the steering information is available and displayed	Goal ID: 7222(b)	Source Goal: 7222(b)
Description: First NAV designate the Target position (or Offset aim point) With the TDC assigned to the desired display	Operator: Pilot	Completion Time: ²⁵
(Radar or the AMIRS), the designation is then adjusted by moving the TD diamond or the NAV stabilized cursor designation When satisfied that the designation is accurately on the Target (or Offset point) add O/S if required	r Priority: 4	Allowable Delay (K): ¹⁶ Difficulty (D)
(Pre-programmed) by depressing the appropriate push button on the HSD Confirm that the Target Wypt, distance	c Interruptable: Yes	s Sheddable: No
and nearing are displayed in the FULD and that they are accurate	Resumable: No	Shed If Late: Not Applicable
	Feeds Back to Higher Level Goal	er Level Goal No
Auditory Category: 0 None		KNOWLEDGE
External Cue: Not Applicable		Declarative:
Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person)		Autoraft operating procedures Tactics Standard Operating mesodores Designation mesocolines Sensor displayes and sombolioov
Initiating Conditions: Desired Range from the target		interpretation
Initiating Actions: Nav designate the target		Situational:
		General target Area features Range and distance from target
Ending Actions: Keep target designation on the desired aim point		
OUTPUT/BEHAVIOUR CO	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Voice: 0 None	Voice: 0 None	
Psychomotor: 1 1 Sunple Psycho	Psychomotor: 1 Automatised, highly learned	highly learned
Memory: I Commit to memory (LTM and STM)	Memory: 5 Memorization	
External Influenced Variables Target designation symbology		
Output Interface: DDI,HUD		
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS	TUAL PROCESS
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision: 4 Spatial encod	4 Spattal encoding, visual pattern recognition
Audition: 0 None Au	Audition: 0 None	
Kinesthetic: ⁰ Nonc Kine	Kinesthetic: 0 Nonc	
Memory: 2.3 Spatially coded M	Memory: 3 Spatial decoding	ng 112
Internal Influenced Variables Bolief that the target designation symbology displayed is on the desired location	cation	
Input Interface: Sensor display on DDI		

Annex I - CF18 Air to Gro	und PCT G	8 Air to Ground PCT Goal Analysis Results	sults
IP Number 7 2 2 2(c) Goal: that the target area is identified with Aircraft Sensors	Goal ID:	: 722.2(c)	Source Goal: 7222(c)
Description: Antropate what the target surrounding area look like by reviewing the target photos, Maps or data linked imagery visually or mentally When reviewing the target, recognize how your run-in ground track will bring you into and over the target Visually look at the displayed target Area picture and search for large features that help you to identify smaller features Identify target Area	cry	Pilot 4 ble: Yes :: No	Completion Time: 10 Allowable Delay (K): ¹⁵ Difficulty (D) Sheddable: No Shed If Late: Not Applicable
	Feeds I	Feeds Back to Higher Level Goal	al No VNOMJENCE
Auditory Category: U None External Cue: Not Applicable		1	<u>NNUW LEDGE</u> Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Target has been designated, at the calculated range where magnification provides enough details for area ID.	ections) es enough details for a		Aurcraft operating procedures Tactics Standard Operating procedures Sensor displays and symbology interpretation
Initiating Actions: Look at target area on DDI		U1	Situational:
Ending Conditions: Target Area has been identified Ending Actions: Monitor displayed target Area for target Identification		0 2	Specific target area features (c g terrain, large features surrounding target, weather, etc)
OUTPUT/BEHAVIOUR	COGNITIVE/P	COGNITIVE/PERCEPTUAL PROCESS	TESS
Voice: 0 None	Voice: 0	0 None	
0 None 1 Commut to memory (I TM and STM)	Psychomotor: 0 Memory: 5	0 None 5 Memorization	
External Influenced Variables None Output Interface: DDI			
INPUT/SENSATION	COGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	DCESS
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	Vision: 4	4 Spattal encoding, visual pattern recognition	em recognition
Audition: 0 None	Audition: 0	0 None	
Kinesthetic: ⁰ Nonc	Kinesthetic: 0	0 None	
Memory: 2.3 Spatially coded	Memory: 3	3 Spatial decoding	
Internal Influenced Variables Belief that the Area displayed on the DDI corresponds to the desired target surroundings Input Interface: DDI	target surroundings		

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Annex I - CF18 Air to Gro	und PCT	8 Air to Ground PCT Goal Analysis Results	s Results
IP Number 7 2 2 2(c) Goal: that the target 1s identified	Goal ID:	ID: 7222(e)	Source Goal: 7222(e)
Description: Antucipate what the target looks like by reviewing the target photos, Maps or data linked imagery visually or mentally. When reviewing the target, recognize what the target image should look like on the displays. Adjust Sensors information displayed to optimize target resolution and recognition features. Visually look at the target picture displayed on the Sensors tactical displays and search for large features that help you to identify smaller features Identify target	the	Operator: Pilot Priority: 4 A Interruptable: Ycs Resumable: No	De
Auditory Category: 0 None External Cue: Not Applicable	555 1	reeus dack to fuguer lievel Goal Dec	VELGUAL NO KNOWLEDGE Declarative:
for Tai	level ops /here magnification	provides enough details	Aircraft operating procedures Tactics Standard Operating procedures Anticipation of target representation on display for conditions of the day Interpretation of Map/Imagery/Onboard Sensors and symbology/LINK 16
Initiating Actions: Look at the target image on the DDI Ending Conditions: Target is positively Identified Ending Actions: Monitor target features to further confirm ID			Situational: Specific target features (c g terram, large features surrounding target, smaller unque target features, weather, etc.) Target IR picture Surrounding IR picture Target Radar Picture Surrounding Radar picture
OUTPUT/BEHAVIOUR	COGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Voice: 0 None Psychomotor: 1 1 Simple P:	Voice: Psychomotor:	 None Automatised, highly learned 	learned
Memory: 1 Commit to memory (LTM and STM) External Influenced Variables None Output Interface: DDI, Maps, Photos	Memory:	5 Memorization	
INPUT/SENSATION Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	COGNITIN Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	L PROCESS ual pattern recognition
	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded Internal Influenced Variables Belief that the target displayed corresponds to the assigned target for attack Input Interface: DDI, Maps Photos	Memory: or attack	3 Spatial decoding	

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Annex I - CF18 Air to G	ound PCT	8 Air to Ground PCT Goal Analysis Results	Its
IP Number 7 2 2 2(g) Goal: that the PGM weapons are delivered	Goa	Goal ID: 7222(g)	Source Goal: 7222(g)
Description: Depress and hold the weapons release button (Pickle button) on the stick Confirm that the PGM weapons are being released Once all weapons have been released, release Pickle button Confirm weapons release on the SMS page on the DDI	SW	Operator: Pilot Com Priority: 2 Allowable Delay (K): Interruptable: No Resumable: Not Applicable Shec Feeds Back to Higher Level Goal No	Completion Time: 5 elay (K): 12 Difficulty (D) Sheddable: No Shed If Late: Not Applicable No
0		Deri	<u>KNOWLEDGE</u>
EXTERTIAL CLUE: NON Applications Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Weapons solution validated and at the release altitude and or range		Airci	Arreraft at yes Arreraft operating procedures Tactics Standard Operating procedures Weapons operating procedures
Initiating Actions: Monitor displayed release symbology Ending Conditions: Weapons have been released. Ending Actions: Stop attending to goal		Situ Type terra	Situational: Type of weapon released, weather conditions, visibility, winds, sun, terrain, target type
OUTPUT/BEHAVIOUR	COGNITIVI	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 Nonc	Voice:	0 None	
Psychomotor: 1 Simple Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	 Automatised, highly learned Memorization 	
External Influenced Variables Weapon release from aucraft, Pickle button depression, Weapon Output Interface: HUD, DDI, HOTAS, Pickle button	depression, Weapons release symbology		
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	<u>SS</u> cognition
Audition: 1 Tone or sumple auditory signal	Audition:	1 Automatised, highly learned perception	zption
Kinesthetic:1Sumple stimulusMemory:24Semantically coded	Kinesthetic: Memory:	 Automatused, highly learned perception Verbal decoding 	ption
Internal Influenced Variables Belief that the weapons have been delivered and that the symbology displays that fact Input Interface: HUD, DDI, Aurtraft movement at weapons release,	ogy displays that fact		

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			Annex I - CF18 Air to Gro	ound PC	8 Air to Ground PCT Goal Analysis Results	sis Results	
IP Number 72	7 2 2 2(J) Go	Goal:	that the target designation symbology is on the desired target aim point		Goal ID: 7222()	Source Goa	Source Goal: 7222()
Description: Adjust and update target designation on the desired a the right to ensure constant field of view to the target	target designation constant field of v	on on th view to	Description: Adjust and update target designation on the desired aim point by moving the TDC If required, turn the aircraft to the right to ensure constant field of view to the target		Operator: Pilot Priority: 3 Allo Interruptable: No Resumable: Not Applicable	wable Delay (Completion Time: 40 (K): Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: External Cue:		0 None Not Applicable	able		Feeds Back to Higher Level Goal	Level Goal No Declarative:	KNOWLEDGE
Cognitive Category: Initiating Conditions:		Spatial t designi	4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Target designation has move off the desired Aim point, or LGB has been released and is guiding to target	irections) tsed and is guid	ing to target	Aircraft operating procedures Design interpretation	Arrcraft operating procedures Tactics Standard Operating procedures Designation procedures Sensor displays and symbology interpretation
Initiating Ac Ending Cond Ending Ac	Initiating Actions: Depress and move the TDC inding Conditions: Designation has been kept o Ending Actions: Monitor target designation	is and m lation ha	Initiating Actions: Depress and move the TDC Ending Conditions: Designation has been kept on the desired aim point and/or weapons impact Ending Actions: Monitor target designation			Situational: Specific target arc: target, weather, etc	Situational: Specific target area features (e.g. terrain, large features surrounding target, weather, etc.), type of attack, type of weapon delivered
<u>OUTPO</u>	OUTPUT/BEHAVIOUR	<u>IOUR</u>		COGNITI	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS	
Voice: Developmentor:	0 None 1.2 Difficult but familiar	hut fam		Voice:	 Nonc A Snatial encoding 		
r sycuolinout. Memory:	1 Commit to	to mem	LTM and STM)	rsycholitotor. Memory:			
External Influenced Variables Output Interface: HUD, DDI	nced Variable: .e: HUD, DDI	S	Target designation symbology				
<u>INPU'</u> Vision:	INPUT/SENSATION sion: 1 2 Pattern, spati	spatial	VSATION Pattern, spattal relatioship, tracking, graphic displays	COGNI Vision:		E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition	
Audition:	0 None			Audition:	0 None		
Kinesthetic:	1 1 Simple stimulus	stimulu		Kinesthetic:		1 Automatised, highly learned perception	
Memory: 24 Semanto: Internal Influenced Variables Input Interface: DD ¹	24 Semantically coded nced Variables Belieft : DDi	, lle	y coded Belief that the designation is on the desired target aim point	Memory:	3 Verbal decoding		

Annex I - CF18 Air to Gro	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7222(m) Goal: that the attack is coordinated with others to ensure safety and success	ccess Goal ID: 7222(m)	Source Goal: 7221(1)
Description: Maintain spacing by confirming that other Aireraft, Elements or Sections are conducting target attack as planned Ensure that own attack is conducted within the allotted time window. Adjust spacing or routing to target to maintain required spacing from other Aireraft, Elements or Sections ahead. Maintain lookout to ensure all collision potentials are avoided, and to provide mutual support. Change flight path as necessary	Operator: Pilot Priority: 4 Interruptable: Yes Resumable: Yes	Completion Time: Allowable Delay (K): 1 3 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Ŭ	Feeds Back to Higher Level Goal	el Goal No <u>KNOWLEDGE</u> Declarative:
EXTERTIAL CLUE: 1001 Application: Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Designated range from target where attack has to be coordinated	level ops	Arcraft operating procedures Tactics Standard Operating procedures Mass attack coordination
Initiating Actions: Fly own attack as planned Ending Conditions: Egress completed. Ending Actions: Monutor other elements		Situational: Number and type of ancraft involved Specific target area features (e.g. terrain, large features surrounding target, weather, etc.), type of attack, type of weapon delivered.
OUTPUT/BEHAVIOUR Voice: 0 None	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 Nonc	ROCESS
 Difficult but familiar Commit to memory (LTM and STM) 		
External Influenced Variables Aircraft position, alititude, attitude, heading, speed and g Output Interface: Aircraft controls and throttles		
INPUT/SENSATION Vision: 2 Perpheral	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automatised, highly learned perception	PROCESS arned perception
••	Audition: 0 None	
Kinesthetic: ⁰ None Memory: 2.5 Complex operation Internal Influenced Variables Bclief that the cgrcss has been completed	Memory: 5 Recall	
Input Interface: HUD, HSD		

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	Annex I - CF18 Air to Ground PCT Goal Analysis Results	PCT Goal An	alysis Results
IP Number 7231(a) Goal:	: that radar contact is established with formation members	Goal ID: 7231(a)	Source Goal: 7112(a)
Description: Adjust and/or confirm Radar parameters to ensure searching the desired on the Radar display Confirm position of other mission clements by me position and reading the displayed Bearing(or Bull eye)/Rangc/Alititude	Description: Adjust and/or confirm Radar parameters to ensure searching the desired airspace Obscrve Radar picture being built on the Radar display Confirm position of other mission clements by moving radar cursors over their displayed position and reading the displayed Bearing(or Bull eye)/Range/Altitude	Operator: Pilot Priority: 4 Allowable Interruptable: Resumable: Ycs Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): 1 75 Difficulty (D) Sheddable: No Shed If Late: Not Applicable sher Level Goal No
Auditory Category:0NoneExternal Cue:Not ApplicableCognitive Category:5MemorizationInitiating Conditions:Attack completed	 None Not Applicable Memorization/recall, calculation, estimation, deduction, reasoning, high level ops ack completed 	4	<u>KNOWLEDGE</u> Declarative: Arrcraft operating procedures Tactics Standard Operating procedures Radar operation
Initiating Actions: Switch to Radar Air-to-Air search mode Ending Conditions: Radar contact displayed on DDI Ending Actions: Monitor Radar contact	Radar Aır-to-Aır search mode tact displayed on DDİ tadar contact		Situational: Mission requirements and objectives. Specifics of the factical situation (e g threat/friendly forces, weather, terrain, etc)
OUTPUT/BEHAVIOUR		COGNITIVE/PERCEPTUAL PROCESS	UAL PROCESS
1	Psychoi M. M.		dıng m
External Influenced Variables Radar syml Output Interface: DDI (Radar display), HUD	Radar symbology Isplay), HUD		
INPUT/SENSATION Vision: 1.2 Pattern, spat	al relatioship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recogn	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
Audition: ⁰ None Kinesthetic: ⁰ None	Audition: Kinesthetic:	Audition: 0 None resthetic: 0 None	
Memory: 2.4 Scmantically coded Internal Influenced Variables Bchef tha Input Interface: DDI (Radar display), HUD	t the radar contact displayed corresponds to the formation me	Memory: 3 Verbal decoding mber desired	

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Annex I - CF18 Air to G	TDA buno	8 Air to Ground PCT Goal Analysis Results	sis Results
IP Number 7.2.3 1(b) Goal: that the pilot confirms the position of the formation by visually referencing his Link 16 display on the HSD		Goal ID: 7231(b)	Source Goal: 7113(d)
Adjust and/or confirm LINK 16/MIDS Tactical Display parameters to ensure the desired airspace is covered Adjust and/or cange scale to ensure clarity of displayed information Observe picture being built on the LINK 16/MIDS Reduce range scale to ensure clarity of Formation of Formation Observe picture displayed information Mentally Tactical Display Visually confirm position of Formation members by analyzing displayed information Mentally build formation position and situational awareness		Operator: Pilot Priority: 4 Allowable Interruptable: Ycs Resumable: Ycs Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): 175 Difficulty (D) Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatrzed, highly learned (easy to do for a trained person) Initiating Conditions: Tactrcal phase of mission begins			KNOWLEDGE Declarative: Arcraft operating procedures, standard operating procedures, classified aircraft operating procedures, Link 16 displays/controls
Initiating Actions: Visually reference Link 16 tactical display on HSD Ending Conditions: Tactical phase of mission ends Ending Actions: Stop visually referencing Link 16 tactical display on HSD			Situational: Tactıcal sıtuatıon, phase of mssıon, mıssıon objectives/requirements, correlation of displayed information with information displayed from other sources
OUTPUT/BEHAVIOUR COGNIT Voice: 0 None Voice Psychomotor: 11 Simple Psychomotor Psychomotor: 11 Simple Psychomotor Memory: 1 Commit to memory (LTM and STM) Memory Memory: 1 Commit to memory (LTM and STM) Memory External Influenced Variables HSD settings/controls Memory Utput Interface: HOTAS HSD Link-16 Vision Utput Interface: HOTAS HSD Link-16 Vision Mutput Interface: HOTAS HSD Link-16 Vision Interface: HOTAS HSD Link-16 Vision Interface: 12 Pattern, spatial relatioship, tracking, graphic displays Vision Vision: 12 Pattern, spatial relatioship, tracking, graphic displays Vision Vision: 12 Pattern, spatial relatioship, tracking, graphic displays Vision Vision: 12 Pattern, spatial relatioship, tracking, graphic displays Vision Vision: 12 Pattern, spatial relatioship, tracking, graphic displays Vision Vision: 12 Pattern, spatial relatioship, tracking, graphic displays Vision Vision: 12 Pattern, spatial relatioship, t	COGNITIV Voice: Psychomotor: Memory: Memory: Vision: Vision: Kinesthetic: Memory: tactucal display	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 Nonc vchomotor: 1 Automatised, highly learned Memory: 5 Memonzation Memory: 5 Memonzation Vision: 4 Spatial encoding, visual pattern recog Vision: 0 None Vision: 0 None Memory: 3 Spatial decoding Memory: 3 Spatial decoding	PERCEPTUAL PROCESS 0 Nonc 1 Automatised, highly learned 5 Memonzation 5 Memonzation 4 Spatial encoding, visual pattern recognition 0 None 0 None 3 Spatial decoding

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Annex I - CF18 Air to Grou	ind PCT	8 Air to Ground PCT Goal Analysis Results	
IP Number 7 2 3 1(c) Goal: that the post-attack formation join-up is completed safely and expeditiously	Goal ID:	ID: 723 l(c) Source Goal:	Goal: 7113(c)
Description: Formation Join-up is performed by using a combination of a visual overtake and cut-off anele	Op	Operator: Pilot Co	Completion Time:
The cut-off angle is maintained by varying bank angle as the aircraft is moving up the reference line. The geometry	ۍ ۲	Priority: ³ Allowable Delay (K):): 1.5 Difficulty (D)
or the rejoint is such that an increase in speed will require a decrease in bark to maintain the cur-off angle and ytcc versa. Radar lock-on may be used to assist The Vc is monitored on the HUD and represent your true closure (both	th	able: No	Sheddable: No
iongitudinal and lateral) Establish a crosscheck between speed, bank angle and the reference line. The closure is then reduced as the desired		Resumable: Not Applicable Sh	Shed If Late: Not Applicable
formation position is attained To rejoin in close formation, the aircraft is moved to one side about 2-3 aircraft widths and about 50 feet low 50 to		Feeds Back to Higher Level Goal No	
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable		Declarative:	
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	vel ops	Standard operati mission briefing	Standard operating procedures, aircraft controls and throttles, mission burefing
Initiating Conditions: Individual attacks have been completed Formation Join-up is required			Q
Initiating Actions: Formation members beam to manoeuver IAW the pre-planned join-up procedure		Situational:	
		Environmental	Environmental conditions relative formation following attack whase
Ending Conditions: Desired tactical formation is established		surface-to-air a	surface-to-air and air-to-air threats in near proximity, timing/routing
Ending Actions: Desired tactical formation is maintained		constaints	
<u>OUTPUT/BEHAVIOUR</u>	OGNITIVI	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 3 Complex and or unfamiliar	Psychomotor:	5 Mcmorization/recall, calculation, estimation, deduction, reasoning	on, deduction, reasoning
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Ancraft position, altitude, attitude, heading, speed and g Radar/AMIRS parameters.	RS parameters.		
Output Interface: Aurtraft controls and throttles HUD Sensor displays			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	g
Audition: 0 None	Audition:	0 Nonc	
Kinesthetic: 1 2 Complex stimulus Ki	Kinesthetic:	4 Spatial encoding	
Memory: 24 Semantically coded	Memory:	3 Verbal decoding	
Internal Influenced Variables Behef that the formation join-up has been conducted.			
Input Interface: Visual cucs Sensor information (AMIRS/Radar) Link 16			

Annex I - CF18 Air to Gr	ound PCT	8 Air to Ground PCT Goal Analysis Results	sis Results
IP Number 7 2 3 1(d) Goal: that visual contact is established with formation members	Goa	Goal ID: 7231(d)	Source Goal: 7.1 1 2(f)
Description: From SA built with Aircraft sensors and LINK 16/MIDS, look in the estimated bearing and range of the mission elements Start a visual search pattern focusing on the estimated distance of the contacts Find mission elements visually		Operator: ^{Pilot} Priority: ⁴ Allowable Interruptable: Resumable: Yes Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): 1 75 Difficulty (D) Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Attack completed Initiating Conditions: Initiating Actions: Start search pattern	Jrrections)		KNOWLEDGE Declarative: VIsual search pattern technique Situational:
Ending Actions: Monitor visual contact			Mission requirements and objectives Specifies of the tactical situation (e g threat/friendly forces, weather, terrain, etc.) Distance from visual contact
OUTPUT/BEHAVIOUR Voice: 0 None	COGNITIV Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	L PROCESS
Psychomotor: 1 I Sumple Memory: 1 Commut to memory (LTM and STM)	Psychomotor: Memory:	 Automatised, highly learned Memorization 	hly leamed
External Influenced Variables Nonc Output Interface: Nonc			
INPUT/SENSATION Vision: 2 Perpheral	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automatised, highly learned perceptio	E/PERCEPTUAL PROCESS 1 Automatised, highly learned perception
Audition: 0 None Kinesthetic: 0 None	Audition: Kinesthetic:	0 None 0 Nonc	
Memory: 2.3 Spatially coded Internal Influenced Variables Belief that visual contact is established with formation member. Input Interface: HUD	Memory:	3 Spatial decoding	

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		Annex I - CF18 Air to Ground PCT Goal Analysis Results	nd PCT (Goal Analysis	Results
IP Number 7	7 2 3 1(e) Goal:	that AMIRS contact is established with formation members	Goal ID:	D: 7231(e)	Source Goal: 7112(g)
Description: Adjust and/or con on the AMIRS di position and read	Description: Adjust and/or confirm AMIRS parameters to ensure sear on the AMIRS display Confirm position of other missio position and reading the displayed bearing and clevation	Description: Adjust and/or confirm AMIRS parameters to ensure searching the desired airspace. Observe IR picture being built on the AMIRS display. Confirm position of other mission elements by moving AMIRS cursors over their displayed position and reading the displayed bearing and elevation.		Operator: Pılot Priority: 4 Allowable Interruptable: Resumable: Ycs Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): 175 Difficulty (D) Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: External Cue: Cognitive Category: Initiating Conditions	: Attac	 Nonc Not Applicable Memorization/recall, calculation, estimation, deduction, reasoning, high level ops ack completed 	sdo		KNOWLEDGE Declarative: Arrcraft operating procedures Tactics. Standard Operating procedures AMIRS operation Situational:
Ending Cor Ending Cor Ending	itiating Actions: Journal of AMIRS contact displaye Jing Conditions: AMIRS contact displaye Ending Actions: Monitor AMIRS contact	Ending Conditions: AMIRS contact displayed on DDI Ending Conditions: AMIRS contact displayed on DDI Ending Actions: Monitor AMIRS contact			Mission requirements and objectives Specifies of the factical situation (c g threat/friendly forces, weather, terrain, etc)
OUTP	OUTPUT/BEHAVIOUR		GNITIVE	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Voice: Psychomotor:	0 None 1 2 Difficult but familiar		Voice: Psychomotor:	 Nonc Spatial encoding 	
Memory: External Influ	nencec	 Commit to memory (LTM and STM) Variables AMIRS symbology 	Memory:	5 Memorization	
Output Interf	Output Interface: DDI (AMIRS display), HUD				
<u>Vision:</u>	Ě	al relatioship, tracking, graphic displays	COGNITIV Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	PROCESS I pattern recognition
Audition:	: 0 None	v	Audition:	0 None	
Kinesthetic:	0 None	Kind	Kinesthetic:	0 None	
Memory: Internal Influ	Memory: 24 Semantically coded Internal Influenced Variables Belieft	he AMIRS contact displayed corresponds to the formation r	Memory: nember destred	3 Verbal decoding	
Input Interfa	Input Interface: DDI (AMIRS display), HUD	splay), HUD			

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Goal: that visual contact with other formation members is established using Goal ID: 7 2 3 1(f) Sourc NVGs NVGs Operator: Pilot Sourc ft sensors and LINK 16/MIDS, look in the estimated bearing and range of the mission Operator: Pilot Pilot arch pattern at the estimated location of the contacts Find mission elements visually Priority: 4 Allowable Delay arch pattern at the estimated location of the contacts Find mission elements visually Priority: 4 Allowable Delay arch pattern at the estimated location of the contacts Find mission elements visually Priority: 4 Allowable Delay arch pattern at the estimated location of the contacts Find mission elements visually Priority: 4 Allowable Delay arch pattern at the estimated location of the contacts Find mission fermits visually Priority: 4 Allowable Delay arch pattern at the estimated location of the contacts Find mission fermits visually Priority: 4 Allowable Delay arch pattern at the estimated location of the contacts Find mission fermits Priority: 4 Allowable arch pattern at the estimated location of the contacts Find mission fermits Priority: 4 Allowable <t< th=""><th></th></t<>	
n Operator: Pilot Priority: 4 Allowable Delay Interruptable: Resumable: Not Applicable Feeds Back to Higher Level Goal No	Source Goal: 7112(h)
	Completion Time: wable Delay (K): 1.5 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Applicable External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Visual/NVG scan tech Initiating Conditions: Tactoral phase of mission begins Night, VMC flight conditions NVG contact with other formation members is required	<u>KNOWLEDGE</u> Declarative: Visual/NVG scan techniques, standard operating procedures, NVG operating procedures.
Initiating Actions: Visual cues and other sensor information (Link 16/AMIRS/Radar) are used to begin NVG search for other formation member Situational: Ending Conditions: NVG contact with other formation members is established Environmental condute Ending Actions: Tactical phase of mission ends. Day and/or IMC flight conditions occur NVG contact with other formation members no longer required Image: Situation members of mission ends. Day and/or IMC flight conditions occur NVG contact with other formation members no	Situational: Environmental conditions, tactical situation, mission objectives/requirements
OUTPUT/BEHAVIOUR COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None Voice: 0 None Psychomotor: 11 Smple Voice: 0 None Psychomotor: 11 Smple Psychomotor: 1 Automatsed, highly learned Memory: 1 Commut to memory (LTM and STM) Memory: 3 Memory: 3 Memory: External Influenced Variables None None None None Uput Interface: Nofe None Vision: 4 Spatial conding, usual pattern recognition Vision: 12 Pattern, spatial redoning, graphic displays Vision: 4 Spatial recoding, usual pattern recognition Vision: 0 None Vision: 0 None None Memory: 2.3 Spatially coded None Nemory: 3 Spatial docoding Memory: 2.3 Spatially coded Memory: 3 Spatial docoding Memory: 2.3 Spatial docoding Memory: 3 Spatial docoding	OCESS med ROCESS pattern recognition

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	Goal: that the aircraft is Egressed at Low altitude	Goa	Goal ID: 7232(b)	Source Goal: 7232(b)
Description: Maintain constant altitude above gro or descend Manocuvre aircraft and Maintain desired Ground Speed by clearing tasks	Description: Maintain constant altitude above ground by anticipating rising/descending terrain, and establish appropriate climb or descend Manocuvre aircraft and visually confirm flight path by looking through Velocity Vector in the HUD Maintain desired Ground Speed by adjusting throttles appropriately Conduct visual Cross Check Perform terrain clearing tasks	e u	Operator: Pilot Priority: 6 Interruptable: Yes Resumable: No	Completion Time: 999 Allowable Delay (K): Difficulty (D) 0 3 Sheddable: No Shed If Late: Not Applicable
		Fe	Feeds Back to Higher Level Goal	Level Goal No
Auditory Category: 0 Nonc	one			KNOWLEDGE
External Cue: Not Cognitive Category: 5 h	Not Applicable 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	level ops		Declarative: Aurcraft operating procedures Tactics Standard Operating procedures Applicable orders, regulations and plans
Initiating Conditions: Post target RV completed	gct RV completed			
Initiating Actions: Fly arc	Fly aircraft towards next egress waypoint			Situational:
Ending Conditions: Auroraft has crossed th Ending Actions: Stop attending to goal	Ending Conditions: Attends the scrossed the FLOT Home Bound and transitions to RTB phase. Ending Actions: Stop attending to goal			Mission requirements and objectives Specifics of the tactical situation (e g threat/friendly forces, weather, terrain, etc.) Details of on-going or planned activities
OUTPUT/BEHAVIOUR		COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 Nonc		Voice:	0 None	
Psychomotor: 1.2 Difficult but familiar		Psychomotor:	4 Spatial encoding	
Memory: 1 Commit t	1 Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variable Output Interface: Auroraft con	External Influenced Variables Ancraft position, altitude, attriude, heading, speed and g Output Interface: Ancraft controls and throttles Ancraft displays (HUD,DD1,HSD)			
INPUT/SENSATION	N	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Vision: 2 Peripheral		Vision:	1 Automatised, hig	l Automatised, highly learned perception
Audition: 0 None		Audition:	0 None	
Kinesthetic: 0 Nonc	K	Kinesthetic:	0 Nonc	
Memory: 2.3 Spatially coded	coded	Memory:	3 Spatial decoding	

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Annex I - CF18 Air to Grou	Air to Ground PCT Goal Analysis Results
IP Number 7 2 5 1(a) Goal: that the tactical roles are established in the formation	Goal ID: 7251(a) Source Goal: 7251(a)
Description: Individual responsibilities in addition to lookout are	Operator: Pilot Completion Time: 999
Lead. terrain avoidance, navigation, tactical control of the formation, mission leader and bombs on target,	Allowable Delay
Number three terrain avoidance, back-up navigation, clement position keeping, tactical control of number four, deputy mission and tactical lead and bombs on target,	Interruptable: N
Wingmen terrain avoidance, position keeping, lookout, bombs on target and monitor sensors	Feeds Back to Higher Level Goal No
Auditory Category: 0 None	KNOWLEDGE
External Cue: Not Applicable	Declarative:
Cognitive Category: 5 Memonzation/recall, calculation, estimation, deduction, reasoning, high level ops	el ops Tacrices Standard Operating procedures Applicable orders, regulations and plans Formation responsibilities
Initiating Conditions: Ingress Is Initiated	
Initiating Actions: Attend to individual responsibilities	Situational:
Ending Conditions: Tactical roles have been established.	Position in the formation, threat, mission
Ending Actions: Continue attending to individual responsibilities	
OUTPUT/BEHAVIOUR 0	COGNITIVE/PERCEPTUAL PROCESS
Voice: 1 Voice Output	Voice: 3 Speech production
Psychomotor: 1 2 Difficult but familiar Psyc	Psychomotor: 4 Spatial cncoding
Memory: 1 Commit to memory (LTM and STM)	Memory: 5 Memonization
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Formation position on Displays	sition on Displays
Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Radios	
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS
Vision: 2 Peripheral	Vision: 1 Automatused, highly learned perception
Audition: 5 Speech input (attended to, salient to the primary task)	Audition: 5 Verbal decoding, speech recognition
Kinesthetic: 1 1 Simple stimulus Ki	Kinesthetic: I Automatised, highly learned perception
Memory: 2.5 Complex operation	Memory: 5 Recall
Internal Influenced Variables Behef that the tactical roles have been established	
Input Interface: Aircraft displays (HUD,DDI,HSD) Radios	

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Annex I - CF18 Air to Gro	ound PCT	Air to Ground PCT Goal Analysis Results	sis Results
IP Number 7 2 5 1(b) Goal: that arrcraft control and flight position are maintained	Goal	Goal ID: 7251(b)	Source Goal: 7251(b)
Description: Maintain aircraft control and position by adjusting Power, Aircraft pitch and roll to obtain desired Airspeed and Flight Path Adjust Flight position by using airspeed or geometry		Operator: Pilot Priority: 6 Interruptable: Resumable: No	Completion Time: 999 Allowable Delay (K): Difficulty (D) 0.2 Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Applicable	Fee	Feeds Back to Higher Level Goal De	· Level Goal No <u>KNOWLEDGE</u> Declarative:
Do 1	h level ops		Aircraft operating procedures Tactics. Standard Operating procedures Applicable orders, regulations and plans
Initiating Actions: Maintain aircraft control Ending Conditions: Tactical portion of the mission completed			Situational: Mission requirements and objectives Specifics of the tactical substion (e or threat/friendly forces weather terrain etc.) Details
Ending Actions: Maintain aircraft control			of on-going or planned activities
OUTPUT/BEHAVIOUR	COGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar P Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spatial encoding5 Memorization	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Formation position on Displays Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)	n position on Displ	ays	
INPUT/SENSATION Vision: 2 Perpheral	COGNITIV Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automatised, highly learned perceptic	E/PERCEPTUAL PROCESS 1 Automatised, highly learned perception
••	Audition:	0 Nonc	
Kinesthetic: ⁰ Nonc Kinesthetic: ⁰ Nonc Memory: 2.5 Complex operation Memory: 5 Recall Internal Influenced Variables belief that the arcraft is in controlled flight and that the factical flight position has been achieved	Kinesthetic: Memory: ght position has been	0 None5 Recalln achieved	
Input Interface: Aircraft displays (HUD,DDI,HSD)			

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Annex I - CF18 Air to Grour	nd PCT Goal	8 Air to Ground PCT Goal Analysis Results
IP Number 7.2.5.1(c) Goal: that a turn is executed to change direction while maintaining formation and mutual summert	Goal ID:	7251(c) Source Goal: 7251(c)
Description:	Onerator:	Pilot Completion Time: 30
Manoeuvre 1 urns are initiated either via voice on the Discreet frequency of by a wing flash from lead. The check him is accomoliched by himme all formation members cimultaneously of the desired angle while		
	Priority: 4	Allowable Delay (K): 1 75 Difficulty (D)
The in place turn is accomplished by turning all formation members simultaneously to 90-180 degrees	Interruptable:	de: Sheddable: No
I ne delayed turn is accomptish by having one formation memoer turning to the desired neading while the remaining position his aircraft and initiates the turn to maintain formation	Resumable:	No Shed If Late: Not Applicable
The cross turn is accomplished by turning towards each other and reestablishing formation after turn is completed		Feeds Back to Higher Level Goal No
Auditory Category: 0 None		KNOWLEDGE
External Cue: Not Applicable		Declarative:
Cognitive Category: 5 Mcmonzation/recall, calculation, estimation, deduction, reasoning, high level ops	sdo ja	Aurcraft operating procedures Tactics Standard Operating modelines Formation keening modedlines
Initiating Conditions: Radio call from lead, wing flash from lead, position enroute		
Initiating Actions: Roll arcraft in the desired direction.		Situational:
		Mission requirements and objectives Specifics of the tactical
Ending Conditions: Desired heading has been attained and desired formation regained		situation (c g threat/friendly forces, weather, terrain, etc) Details
Ending Actions: Stop attending to goal		of on-going or planned activities
OUTPUT/BEHAVIOUR	JGNITIVE/PERC	COGNITIVE/PERCEPTUAL PROCESS
Voice: 1 Voice Output	Voice: 3 Speed	Speech production
Psychomotor: 1 2 Difficult but familiar Psych	Psychomotor: 4 Spati	4 Spatial encoding
Memory: 1 Commut to memory (LTM and STM)	Memory: 5 Mem	5 Memonzation
External Influenced Variables Arreraft position, altitude, heading, speed and g Formation position on Displays Aireraft position in relation to formation member	sition on Displays Aircr	aft position in relation to formation member
Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)		
INPUT/SENSATION	COGNITIVE/PEH	COGNITIVE/PERCEPTUAL PROCESS
Vision: 2 Penpheral	Vision: 1 Autor	1 Automatised, highly learned perception
Audition: 5 Speech input (attended to, salient to the primary task)	Audition: 5 Verb	5 Verbal decoding, speech recognition
Kinesthetic: 1 1 Sumple stimulus Kinesthetic: 1 2 Sumple stimulus	Kinesthetic: I Auto	I Automatiscd, highly learned perception
Memory: 2.5 Complex operation	Memory: 5 Recall	
Internal Influenced Variables belief that the manocuvre turn has been completed and that the desired formation position has been regained	ormation position has be	en regained
Input Interface: Aircraft displays (HUD,DDI)		

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Annex I - CF18 Air to Gro	und PCT	Goal Analy	Air to Ground PCT Goal Analysis Results
IP Number 7251(d) Goal: that the pilot confirms the position of the formation by visually referencing his Link 16 display on the HSD	Goal ID:	ID: 7251(d)	Source Goal: 7113(d)
Description: Adjust and/or confirm LINK 16/MIDS Tactical Display parameters to ensure the desired airspace is covered Reduce range scale to ensure clarity of displayed information Observe picture being built on the LINK 16/MIDS Tactical Display Visually confirm position of Formation members by analyzing displayed information Mentally build formation position and situational awareness		Operator: Pilot Priority: 4 Allowable Interruptable: Ycs Resumable: Ycs Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): ¹⁷⁵ Difficulty (D) Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Tactical phase of mission begins			KNOWLEDGE Declarative: Arreraft operating procedures, standard operating procedures, classified arreraft operating procedures, Lmk 16 displays/controls
Initiating Actions: Visually reference Link 16 tactical display on HSD Ending Conditions: Tactical phase of mission ends Ending Actions: Stop visually referencing Link 16 tactical display on HSD.			Situational: Tactıcal sıtuatıon, phase of mıssıon, mıssıon objectives/requirements, correlation of displayed information with information displayed from other sources
OUTPUT/BEHAVIOUR Voice: 0 Nonc Vsychomotor: 1 1 Simple Psychomotor: 1 1 Simple Memory: 1 Commut to memory (LTM and STM)	COGNITIVE Voice: Psychomotor: Memory:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None ychomotor: 1 Automatised, highly learned Memory: 5 Memonzation	L PROCESS hijy learned
External Influenced Variables HSD settings/controls Link 16 settings/controls Output Interface: HOTAS HSD Link-16			
INPUT/SENSATION COGN Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays Vision Audition: 0 None Audition Kinesthetic: 0 None Mudition Kinesthetic: 0 None Mudition Kinesthetic: 0 None Mudition Internal Influenced Variables Belief that the formation position has been confirmed on Link 16 tactical display Memory Input Interface: HSD, Link 16 Display/Controls Memory Memory	COGNITIV Vision: Audition: Kinesthetic: Memory: ctcal display	 E/PERCEPTU 4 Spatial encoding. 0 None 0 None 3 Spatial decoding 	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition Audition: 0 None nesthetic: 0 None Memory: 3 Spatial decoding ai display

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Annex I - CF18 Air to Gro	ound PCT	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7 2 5 2(a) Goal: that the ideal tactical formation is selected and flown	Goa	Goal ID: 7.2 5 2(a)	Source Goal: 7252(a)
Description: The lead will select the optimal formation for the tactical situation and direct his formation members to adopt formation Wingmen will position their aircraft to optimize formation at the desired range and altitude delta from their lead	ad	Operator: Pilot Priority: 4 Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 999 Allowable Delay (K): ¹⁵ Difficulty (D) 02 Sheddable: No able Shed If Late: Not Applicable Level Goal No
Auditory Category: 5 Voice Output External Cue: No Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: The overall tactical situation has changed	irections)		KNOWLEDGE Declarative: Tactucs Standard Operating procedures Applicable orders, regulations and plans
Initiating Actions: Lead selects and directs new appropriate formation Wingmen initiate manouevers to achieve formation Ending Conditions: Correct formation is achieved Ending Actions: Correct formation is maintained	vers to achieve fon	mation	Situational: Mission requirements and objectives Specifics of the tactical situation (e g threat/friendly forces, weather, terrain, etc)
UT/E	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice: 1 Voice Output Psychomotor: 1 2 Difficult but familiar	Voice: Psychomotor:	3 Speech production4 Spatial encoding	
Memory: I Commit to memory (LTM and STM)	Memory:	5 Memorization	
EXTERTIAL INTIGENCED VARIABLES AN AUCTARTS POSITIONS, AUTICLESS, AUTICLES, INCOMENTING, SPECIES AND G AUTCRAFTS FEMALYE POSITIONS (FORMATION) Output Interface: Autoraft controls and throttles Autoraft displays (HUD,DDI,HSD)	Alicians relative	positions (rotmation)	
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	ROCESS attern recognition
Audition: 5 Speech input (attended to, salient to the primary task)	Audition:	5 Verbal decoding, speech recognition	recognition
Kinesthetic: ⁰ Nonc	Kinesthetic:	0 None	
cal	Memory: situation	3 Spatial decoding	
Input Interface: Uutside view Radar Link 16/MIDS display (for factical picture) HUD, UDI			

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	7252(b) Goal:	that all aspects of a proper visual lookout are conducted, including maintaining visual contact with other formation members		Goal ID: 7252(b)	Source Goal: 7252(b)
Conduct visual lookout responsibilities	il support by main It responsibilities	Description: Maıntaın vısual mutual support by maıntaınıng sıght of formatıon members while establishing vısual lookout Conduct vısual lookout responsibilities		Operator: Pilot Priority: 9 Allow Interruptable: No Resumable: Not Applicable	Completion Time: 999 Allowable Delay (K): 1.5 Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
Auditory Category:	ory: 0 None		Fr	Feeds Back to Higher Level Goal	Goal No KNOWLEDGE
External Cue: Cognitive Category: Initiating Conditions:	Cue: Not Applicable ry: l Automatized ons: VMC flying condit	External Cue: Not Applicable Cognitive Category: 1 Automatrzed, highly learned (easy to do for a trained person) Initiating Conditions: VMC flying conditions in a tactical arena			Declarative: Visual lookout technique Tactical formation flying Standard Operating Procedures
Initiating Actio Ending Conditic Ending Actic	 Ins: All formation Ins: Mission ends Ins: New appropriation 	Initiating Actions: All formation members commence a continuous task-shared and appropriate Ending Conditions: Mission ends or IMC conditions are encountered Ending Actions: New appropriate crosschecks are initiated (I E IMC radar crosscheck)	e crosscheck of vario	ed and appropriate crosscheck of various external cues, depending o r crosscheck)	Situational: Mission Plan Specifics of the tactical situation (c.g. threat/friendly forces, weather, terrain, etc.)
OUTPUT	OUTPUT/BEHAVIOUR		COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	DCESS
Voice:	0 None		Voice:	0 None	
Psychomotor: Memory:	 Difficult but familiar Commit to memory (2 Drifficult but familiar1 Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spatial encoding 5 Memorization	
External Influenced Variables Output Interface: Aurcraft contri	6	None s and throttles			
<u>Vision:</u>	INPUT/SENSATION sion: 12 Pattern, spatta	SENSATION 12 Pattern, spattal relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	ROCESS attern recognition
Audition:	0 None 0 None		Audition: Kinesthetic:	0 None 0 None	
lence	8	ded Perception that all aspects of visual lookout technique are being completed, and confirmation that all appropriate formation members are visual	Memory: completed, and conf	 Spatial decoding Tirmation that all appropriate form 	mation members are visual

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Annex I - CF18 Air to Grou	und PCT	8 Air to Ground PCT Goal Analysis Results	sults
IP Number 7 2 5 2(c) Goal: that awareness and good positioning is maintained on other formation members and/or formation elements using non visual methods		Goal ID: 7 2 5.2(c)	Source Goal: 7252(c)
Description: Positional mutual support is maintained by keeping SA on formation members position utilizing sensors and data link Remain within sensor and weapons range to support formation members		Operator: Pilot Priority: 4 Allowable Interruptable: Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 999 Allowable Delay (K): ^{1 5} Difficulty (D) Sheddable: No able Shed If Late: Not Applicable Cevel Goal No
Auditory Category: 2 Speech Input (in background) External Cue: No			<u>KNOWLEDGE</u> Declarative:
Cognitive Category: 5 Mcmorization/recall, calculation, cstimation, deduction, reasoning, high level ops Initiating Conditions: Change in tactical environment with respect to beyond visual range formation members or other elements	evel ops nembers or other		Tactıcs Applicable orders, regulations and plans Standard Operating Procedures Sensor displays and symbology interpretation
Initiating Actions: Sensors and or datalink are checked to build updated tactical awareness of BVR friendlys and manouevers are initiated to mai Ending Conditions: Appropriate tactical BVR formation is achieved Ending Actions: Appropriate tactical BVR formation is maintained	fnendlys and ma		Situational: Mission Plan Speerfies of the tactical situation (c g threat/friendly forces, weather, terrain, etc)
<u>OUTPUT/BEHAVIOUR</u>	COGNITIVI	COGNITIVE/PERCEPTUAL PROCESS	ESS
1 Voice Output	Voice:	3 Speech production	
Psychomotor: 0 Nonc Psy Memory: 1 Commut to memory (LTM and STM)	Psychomotor: Memory:	0 None 5 Memorization	
External Influenced Variables None Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD). Radar AMIRS			
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	DCESS em recognition
Audition: 5 Speech input (attended to, salient to the primary task)	Audition:	5 Verbal dccoding, speech recognition	gention
Kinesthetic: ⁰ Nonc K	Kinesthetic:	0 Nonc	
Memory: 2.4 Semantically coded Memory: 2.4 Semantically coded Internal Influenced Variables Perception that all formation elements are in position to give mutual support	Memory: support	3 Verbal dccoding	
Input Interface: Radar AMIRS Link 16/MIDS display (for tactical picture) HUD, DDI			

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Annex I - CF18 Air to Gro	und PCT G	8 Air to Ground PCT Goal Analysis Results	esults
IP Number 7252(e) Goal: that all aspects of a proper NVG visual lookout arc conducted, including maintaining NVG visual contact with other formation members Description:	Goal ID: tembers	: 7252(e)	Source Goal: 7252(c)
Maintain visual mutual support by maintaining sight with NVG of formation members while establishing visual lookout Conduct visual lookout responsibilities		: Pilot 9 able: No	Completion Time: 999 Allowable Delay (K): 14 Difficulty (D) Sheddable: No
	Resum	Resumable: Not Applicable	Shed If Late: Not Applicable
	Feeds]	Feeds Back to Higher Level Goal	ioal No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 2 Passive monitoring of speech/auditory signals			NVG Visual lookout technique Night NVG tachcal formation
Initiating Conditions: Night VMC flying conditions in a tactical arena			11ying Standard Operating Procedures
Initiating Actions: All formation members commence a continuous task-shared and appropriate crosscheck of various external cues using NVG's.	sscheck of various ext	ternal cues using NVG's.	Situational:
Fuding Conditions. Mission ends or IMC conditions are encountered		6)	Mission Plan Specifics of the factical situation (e σ threat/friendly
Ending Actions: New appropriate crosschecks are initiated (I E IMC radar crosscheck)			forces, weather, terrain, etc.) Weather conditions, visibility, ambient light
UUIFUI/BEHAVIOUK	COGNITIVE/P	COGNITIVE/PERCEPTUAL PROCESS	CESS
Voice: 0 Nonc	Voice: 0	0 None	
Psychomotor: 1 3 Complex and or unfamiliar Psy	Psychomotor: 5	Mcmorization/recall, calcul	5 Memonization/recall, calculation, estimation, deduction, reasoning
Memory: I Commit to memory (LTM and STM)	Memory: 5	5 Memorization	
External Influenced Variables Nonc			
Output Interface: Night Vision Goggles Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)	ISD)		
INPUT/SENSATION	COGNITIVE/	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	Vision: 4	4 Spatial encoding, visual pattern recognition	tern recognition
Audition: 0 None	Audition: 0	0 None	
Kinesthetic: ⁰ None K	Kinesthetic: 0	0 None	
Memory: 2.3 Spatially coded	Memory: 3	3 Spatial decoding	
Internal Influenced Variables Perception that all aspects of NVG visual lookout technique are being completed, and confirmation that all appropriate formation members are NVG visual	g completed, and conf	irmation that all appropriate	: formation members are NVG visual
Input Interface: Outside view through NVG's, HUD			

Annex I - CF18 Air to Gro	8 Air to Ground PCT Goal Analysis Results	ysis Results
IP Number 7252(f) Goal: that radio communications are transmitted using HOTAS switch	Goal ID: 7252(f)	Source Goal: 7252(f)
Description: Communicate to other formation Members by pressing on the HOTAS radio switch	Operator: Pilot	Completion Time: 5
	Priority: 5	Allowable Delay (K): Difficulty (D)
	Interruptable:	Sheddable: Yes
	Resumable: Not Applicable	blicable Shed If Late: No
	Feeds Back to Higher Level Goal	r Level Goal No
Auditory Category: 5 Voice Output		KNOWLEDGE
External Cue: No		Declarative:
Cognitive Category: 2 Passive monitoring of speech/auditory signals		Systems knowledge (radio) Standard radio terminology
Initiating Conditions: A radio transmission is required		
Initiating Actions: HOTAS radio trasmitter is depressed, and speech is initiated		Situational:
Ending Conditions: Transmission is fimished		Any external cue
Ending Actions: Transmission is received		
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 1 Voice Output	Voice: 3 Speech production	uc
Psychomotor: 1 1 Sumple Ps	Psychomotor: 1 Automatised, highly learned	shly learned
Memory: 0 None	Memory: 0 None	
External Influenced Variables Level of radio clutter/emissions		
Output Interface: Radios		
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS	JAL PROCESS
Vision: 0 None	Vision: 0 None	
Audition: 5 Speech input (attended to, salient to the primary task)	Audition: 5 Verbal decoding	5 Verbal decoding, speech recognition
Kinesthetic: ⁰ Nonc	Kinesthetic: 0 None	
Memory: 21 Accessible, familiar	Memory: 1 Automatised	
Internal Influenced Variables Belief that transmission has left the radio		
Input Interface: Radio		

1	200	G0al IU: / 2 0 1(a)	Source Goal: / 2 0 1(a)	a)
Accurately follow the Ground Track information displayed in the HMD and HUD. Fly on the displayed heading required to the next waypoint. Monitor heading, drift, routing and ground track information. Make appropriate heading corrections to regain and maintain desired ground track.	20	Operator: Pilot Priority: 6 All Interruptable: Yes Resumable: No	Completion Time: 999 Allowable Delay (K): Difficulty (D Sheddable: No Shed If Late: Not Applicable	me: 999 Difficulty (D) 02 o Vot Applicable
Ũ	Fee	Feeds Back to Higher Level Goal	No	KNOWLEDGE
External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Aurcraft's track over ground changes, or requires a change	iving directions)		Declarative: Sensor displays and symbolo, techniques	Declarative: Sensor displays and symbology interpretation Basic navigation techniques
Initiating Actions: HSD and HUD are checked to adjust heading Ending Conditions: Correct groundtrack is achieved Ending Actions: Groundtrack is maintained and monitored			Situational: Speerfic route and/or map Winds	황민
OUTPUT/BEHAVIOUR	COGNITIVI	COGNITIVE/PERCEPTUAL PROCESS	ROCESS	
Voice: 0 None	Voice:	0 None		
Psychomotor: 1 1 Sumple	Psychomotor:	1 Automatised, highly learned	carned	
Memory: 1 Commut to memory (LTM and STM)	Memory:	5 Mcmorization		
External Influenced Variables Aurcraft heading Output Interface: Aurcraft controls and throttles Aurcraft displays (HUD,DDI,HSD) Maps				
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	PROCESS	
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	al pattern recognition	
Audition: ⁽¹⁾ None	Audition:	0 None		
Kinesthetic: ⁰ Nonc	Kinesthetic:	0 None		
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding		

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	Annex I - CF18 Air to Gr	ound PCT	8 Air to Ground PCT Goal Analysis Results	sults
IP Number 7261(b) Goal:	1: that all aspects of an Air Coordination Order are followed	Goa	Goal ID: 7261(b)	Source Goal: 7261(b)
Description: Adhere to Air Coordination Order by accur Airspeed, Altitude and routing restrictions	Description: Adhere to Air Coordination Order by accurately following the ACO routing displayed on the HSD Follow ACO Airspeed, Altitude and routing restrictions		Operator: Pilot Priority: ³ Allowabl Interruptable: No Beenmable: Not Amhrable	Completion Time: 999 Allowable Delay (K): 1 2 Difficulty (D) Sheddable: No Shed If I ate: Not Ambrokhe
		Fee	Feeds Back to Higher Level Goal	No
Auditory Category: 0 Nonc External Cue: Not App) None Not Applicable		1	<u>KNOWLEDGE</u> Declarative:
Cognitive Category: 4 Si Initiating Conditions: An ACC	Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: An ACO routing or restriction is encountered	irrections)	S R	Sensor displays and symbology interpretation Applicable orders, regulations and plans Standard Operating procedures
Initiating Actions: HSD, Maps, and prum Ending Conditions: ACO routing or restric Ending Actions: Stop attending to goal	Initiating Actions: HSD, Maps, and primary instruments(a/s, alt, ctc) are monitored and crosschecked with ACO Ending Conditions: ACO routing or restriction no longer applies Ending Actions: Stop attending to goal	cked with ACO	0 O	Situational: Specific ACO Mission Plan
OUTPUT/BEHAVIOUR	UR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	ESS
Voice: 0 Nonc		Voice:	0 None	
Psychomotor: 0 None	F	Psychomotor:	0 None	
Memory: 1 Commt to	1 Commit to memory (LTM and STM)	Memory:	5 Memonzation	
External Influenced Variables Output Interface: Aurcraft control	External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps			
INPUT/SENSATION	N	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	CESS
Vision: 1 1 Text, Dial Reading	Rcadıng	Vision:	3 Verbal encoding	
Audition: 0 Nonc		Audition:	0 None	
Kinesthetic: 0 None		Kinesthetic:	0 None	
Memory: 23 Spatially coded	oded	Memory:	3 Spatial decoding	
Internal Influenced Variables Behefi Input Interface: HUD, DDFs, HSD, Map	Belief that formation/aircraft is adhereing to planned ACO restriction SD, Map	UOI		

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Ending Conditions: Tunngs and Situational: Ending Actions: Groundspeed is adjusted based on the next required tunng, or groundspeed becomes a nonessential item. Specific route and/or map Mission Plan Winds Ending Actions: Groundspeed is adjusted based on the next required tunng, or groundspeed becomes a nonessential item. Specific route and/or map Mission Plan Winds OUTPUT/BEHAVIOUR OUTPUT/BEHAVIOUR COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None Voice: 0 None Psychomotor: 1 Simple Fsychomotor: 1 Automatised, linghly learned Memory: 1 Commut to memory (LTM and STM) Memory: 5 Memoration External Influenced Variables Arreaft position, attuide, heading, speed and g Memory: 5 Memoration Uput Interface: Arreaft position, attuide, heading, speed and g Memory: 5 Memoration Uput Interface: Arreaft position, tracking, graphe displays (HUD.DDI,HSD) Maps 4 Systial attending, visual pattern recognition Vision: 12 Pattern, spatial relationship, tracking, graphe displays COGNITIVE/PERCEPTUAL PROCESS Vision: 12 Pattern, spatial relationship, tracking, graphe displays Vision: 0 None COGNITIVE/PERCEPTUAL PROCESS Vision: 0 None Voice:
Memory: 2.3 Spatially coded

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Annex I - CF18 Air to G	round PC	Air to Ground PCT Goal Analysis Results	sults
IP Number 7 2 6 1(d) Goal: that all Air Coordination Order restricted area's are avoided		Goal ID: 7261(d)	Source Goal: 7261(d)
Description: Avoid ACO restricted areas by monitoring HSD displayed information and verifying information on the Area MAP		Operator: Pilot	Completion Time: 999
	4 1	Priority: ³ Allowab Interruptable: No	Allowable Delay (K): ¹ 25 Difficulty (D) Sheddable: No
	R	Resumable: Not Applicable	Shed If Late: Not Applicable
	ł	Feeds Back to Higher Level Goal	al No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable		I	Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	ig directions)		Sensor displays and symbology interpretation Applicable orders, regulations and plans Standard Obersting proceedings
Initiating Conditions: An ACO restricted area is encountered			composed Summado a maxima and and around a substances
Initiating Actions: HSD and Maps are monitored and crosschecked with ACO		S	Situational:
Ending Conditions: ACO restricted area no longer applies		S	Specific ACO Mission Plan
Ending Actions: Stop attending to goal			
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	ESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 0 None	Psychomotor:	0 Nonc	
Memory: 1 Commut to memory (LTM and STM)	Memory:	5 Memonzation	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g			
Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps			
INPUT/SENSATION	COGNIT	COGNITIVE/PERCEPTUAL PROCESS	CESS
Vision: 1 I Text, Dtal Reading	Vision:	3 Verbal encoding	
Audition: 0 None	Audition:	0 None	
Kinesthetic: 0 Nonc	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Behef that formation/aircraft is avoiding ACO restricted area			
Input Interface: HUD, DDI's, HSD, Map			

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PN multer Total (1) Canif. East concert comparison is carred out and confirmed through visal conditiones (not and confirmed through visal) Source Canif. (26.10) Source Canif. (26.10)<	Annex I - CF18 Air to G	round PC1	8 Air to Ground PCT Goal Analysis Results	ysis Results
Intervaluy finding ground references to verify that the correct roung is followed Operator: Pitority: 6 Allowal Intervolution: Not Applicable Yes Not Applicable Yes Intervolution: Not Applicable Not Applicable Yes Not Applicable Intervolution: Not Applicable Not Applicable Not Applicable Not Applicable Intervolution: Not Applicable Not Applicable Not Applicable Not Applicable Intervolution: Not Applicable Not Applicable Not Applicable Not Applicable Intervolution: Not Applicable Not Conditions are consoling of decoding, puttern recognition (reading maps, giving directions) Not Applicable Not Applicable Intervolution: Nor Applicable Nor Applicable Nor Applicable Nor Applicable Intervolution: Nor Applicable Nor Applicable Nor Applicable Nor Applicable Intervolution: Nor Ancenth position: Nor Applicable Nor Applicable Nor Applicable Intervolution: Nor Ancenth position: Nor Applicable Nor Applicable Nor Applicable Intervolution: Nor Ancenth position:	7262(a) Goal: g			Source Goal: 7262(a)
Priority: Allowal Interruptable: No terruptable: No at Cue: Not Applicable terruptable: No terruptable	Conduct Navigation by visually finding ground references to verify that the correct routing is followed	o	perator: Pilot	Completion Time: 10
Interruptable: Yas Interruptable: Yas Resumable: No Resumable: Resumable: No Resumable: Resumable: Resumable: No Resumable: Resumable: Resumable: Resumable Resumable: Resumable: Resumable: Resumable: Resumable Resumable: Resumable: Resumable: Resumable: Resumable: Resumable Resumable: Resumable: Resumable: Resumable: Resumable: Resumable Resumable: R		Pr		
Resumable: No alCue: Not Applicable alCue: Not Applicable alCue: Not Applicable feeds Back to Higher Level G difficue: Not Applicable alCue: Not Applicable difficue: Not Condutions are conserbecked with maps to ensure correct navigation difficue: Not Condutions are conserbecked with maps to ensure correct navigation difficue: Not Condutions are encountered or meson ensite Actions: Other navigation techniques(HSD) are used exclusively UTTREHAZIOUIR COCMITIVE/PERCEPTUAL PROC UTTREHAZIOUIR Nome I I Simple Procention I I Simple Procention ace: Arrent founds and throutes HUD Maps ace: I I Patern, spatal relations, produing, speed and g ace: I I Patern, spatal relations, produing, speed and g ace: <td></td> <td>In</td> <td>terruptable: Ycs</td> <td>Sheddable: No</td>		In	terruptable: Ycs	Sheddable: No
Itelefs		Rí	sumable: No	Shed If Late: Not Applicable
Integroy: 0 None and Cue: Not Applicable and Cue: Not Applicable itegory: 4 Spanal encoding, decoding, pattern recognition (reading maps, giving directions) itegory: 4 Spanal encoding, decoding, pattern recognition (reading maps, giving directions) itegory: 1 Spanal encoding, decoding, pattern recognition (reading maps, giving directions) Actions: Notade visual cues are encountered or mission ends Actions: Notade visual cues are encountered or mission ends Actions: Notade visual cues are encountered or mission ends Actions: Notade visual cues are encountered or mission ends Actions: Notade visual cues are encountered or mission ends Actions: Notade visual cues are encountered or mission ends Actions: Notade visual cues are encountered or mission ends Actions: Notade visual cues are encountered or mission ends Actions: Notade visual visual provide visual cues I I Simple Psychomotor: I Automatised, highly learner I I Simple Psychomotor: I Automatised, highly learner I I Simple I Commit on memory (LIM and SIM) Memory: S Amoniticues I I Simple I		Fle	eds Back to Higher	
mal Cue: Not Applicable regory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) reform: Navigation is required in VMC conditions: difficient: Navigation is required in VMC conditions: Actions: Onside visual cues are crosschecked with maps to ensure correct navigation difficient: Navigation is required in VMC conditions: Actions: Onside visual cues are crosschecked with maps to ensure correct navigation difficient: Navigation is required in VMC conditions: Actions: Onside visual cues are crosschecked with maps to ensure correct navigation difficient: Navigation is required participable Actions: Onside visual cues are crosschecked with maps to ensure correct navigation UTTBEHAVIOUR Voice None Namory: None Namory: None Namory: Actions and throutes HUD Maps Arteraft controls and throutes HUD Maps UTTSENSATION Vision: Once Vision: I Partial recoding, visual participable Action spatial relationship, tracking, graphic displays Arteraft position: Actis None				KNOWLEDGE
Itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Inditions: Navigation is required in VMC conditions Actions: Outside visual cues are crossichecked with maps to ensure correct navigation Actions: Outside visual cues are crossichecked with maps to ensure correct navigation Actions: Outside visual cues are crossichecked with maps to ensure correct navigation Actions: Outside visual cues are crossichecked with maps to ensure correct navigation Actions: Outer navigation is the ensored visual cues with a construction of the ensored visual cues with a cu				Declarative:
Inditions: Navigation is required in VMC conditions Actions: Outside visual cues are crosschecked with maps to ensure correct navigation Actions: INC conditions are encountered or mussion ends Actions: INC conditions are encountered or mussion ends Actions: Other navigation techniques(HSD) are used exclusively ITTPEEHAVIOUR COGNITIVE/PERCEPTUAL PRO 0 None Voite: 0 None 11 Simple Psychomotor: 1 Automatisci, highly learner 12 Simple Arteraft position, altitude, attitude, heading, speed and g 5 Memory: 5 Memory: ace: Arteraft position, altitude, attitude, heading, speed and g 2 4 Spatial recoding, visual pair ace: Arteraft controls and throttles HUD Maps COGNITIVE/PERCEPTUAL PRO 12 Pattern, spatial relation, tracking, graphic displays COGNITIVE/PERCEPTUAL PRO UTSENSATION None Vision: 4 Spatial recoding, visual pair ace: Intern spatial relationship, tracking, graphic displays COGNITIVE/PERCEPTUAL PRO UTSENSATION None Vision: 4 Spatial recoding, visual pair ace: Intern spatial relationship, tracking, graphic displays COGNITIVE/PERCEPTUAL PRO O	4	directions)		Basic navigation techniques Sensor displays and symbology internetation
Actions: Outside visual cues are crosschecked with maps to ensure correct navigation ditions: IMC conditions are encountered or mission ends Actions: Other navigation techniques(HSD) are used exclusively CUTVBEHAVIOUR COGNITIVE/PERCEPTUAL PROD UTVBEHAVIOUR Voice: 0 None 1 Simple Voice: 0 None 1 Simple Psychomotor: 1 Automatised, highly learnee 1 Simple Nemory: 5 Memory: 5 Memory. ace: Aurenth position, altitude, attitude, heading, speed and g 4 5 Memory: 5 Memory. ace: Aurenth position, altitude, attitude, heading, speed and g 4 5 Memory: 6 Memory. ace: Aurenth controls and throttes HUD Maps COCNITIVE/PERCEPTUAL PRO 12 Pattern, spatial relation, tracking, graphic displays 4 5 patial encoding, visual patter ace: Aurenth controls and throttes HUD Maps COCNITIVE/PERCEPTUAL PRO 12 Pattern, spatial relation, tracking, graphic displays 4 5 patial encoding, visual patter ace: Aurenth controls and throttes HUD Maps COCNITIVE/PERCEPTUAL PRO 12 Pattern, spatial relation, tracking, graphic displays 13 Spatial decoding, visual patter aci 0 None None 13 Spatial decoding	Initiating Conditions: Navigation is required in VMC conditions			
Interview Conditions: INC conditions are encountered or mission ends Actions: Other navigation techniques(HSD) are used exclusively COGNITIVE/PERCEPTUAL PRO (TT/BEHAVIOUR) 0 None voice: 0 None 1 I Simple 1 Automatisci, highly learners 1 Simple Psychomotor: 1 Automatisci, highly learners 1 Commut to memory (LTM and STM) Memory: 5 Memorzation ace: Arcraft position, altitude, heading, speed and g 4 Spatial concoration ace: Arcraft controls and throtides HUD Maps COGNITIVE/PERCEPTUAL PRO UTSENSATION Vision: 4 Spatial crecoding, visual pate i 12 Pattern, spatial relatioship, tracking, graphic displays Vision: 4 Spatial crecoding, visual pate i 0 None Vision: 0 None 23 Spatially coded 0 None 23 Spatially coded Memory: 3 Spatial decoding 3 Spatial decoding cered Variables Proception that visual ground references match those expected from map (and/or memory) 3 Spatial decoding	Initiating Actions. Outsule visual cues are crosschecked with mans to ensure correct navigation			Situational:
Actions: Other navigation techniques(HSD) are used exclusively UT/IBEHAVIOUR COGNITIVE 0 None Voice: 1 Simple Voice: 1 Commut to memory (LTM and STM) Psychomotor: 1 Commut to memory (LTM and STM) Memory: ace: Arreaft position, altitude, attitude, heading, speed and g Psychomotor: ace: Arreaft controls and throttles HUD Maps COGNITIVE UT/SENSATION UT/SENSATION COGNITIVE i 12 Pattern, spatial relatioship, tracking, graphic displays Vision: i 0 None 23 Spatially coded i 0 None Memory: i 0 None Statiables i 0 None Memory: i 0 None Memory: i 0 None Kinesthetic: i 0 None Memory: i 0 None Kinesthetic: i 0 None Kinesthetic: i 0 None </td <td>Ending Conditions: IMC conditions are encountered or mission ends</td> <td></td> <td></td> <td>Specific route and/or map Mission Plan</td>	Ending Conditions: IMC conditions are encountered or mission ends			Specific route and/or map Mission Plan
UT/BEHAVIOUR COGNITIVE 0 None voice: 1 I Simple Voice: 1 I Simple Psychomotor: 1 Commut to memory (LTM and STM) Memory: nenced Variables Ancraft position, altitude, heading, speed and g ace: Ancraft position, altitude, heading, speed and g ace: Ancraft controls and throtiles HUD Maps UT/SENSATION COGNITIV UT/SENSATION UT/SENSATION 0 None Vision: 0 None Kinesthetic: 2 3 Spanally coded Memory: 0 None Kinesthetic: 2 3 Spanally coded Memory: ce: Outside vrew, HUD, Map	Ending Actions: Other navigation techniques(HSD) are used exclusively			
0 None Voice: 1 Simple Psychomotor: 1 Simple Psychomotor: 1 Commut to memory (LTM and STM) Memory: nenced Variables Ancraft position, altitude, heading, speed and g ace: Ancraft controls and throttles HUD Maps UT/SENSATION COGNITV e 12 Pattern, spatial relatioship, tracking, graphic displays e 0 None f 0 None f 3 Spatially coded f Psrception that visual ground references match those expected from map (and/or memoroce: ce: Outside view, HUD, Map	OUTPUT/BEHAVIOUR	COGNITIV	E/PERCEPTUA	AL PROCESS
11 Simple Psychomotor: 1 Commut to memory (LTM and STM) Memory: 1 Commut to memory (LTM and STM) Memory: nenced Variables Ancraft position, altitude, heading, speed and g ace: Ancraft controls and throttles HUD Maps CUT/SENSATION COGNITIV UT/SENSATION COGNITIV i 12 Pattern, spatial relatioship, tracking, graphic displays Vision: i 0 Noic Audition: 23 Spatially coded Cocption that visual ground references match those expected from map (and/or memorece: Outside view, HUD, Map		Voice:	0 None	
Memory: attitude, heading, speed and g phic displays <u>COGNITIV</u> Nision: Audition: Kinesthetic: Memory: d references match those expected from map (and/or memor		Psychomotor:	1 Automatiscd, hig	ghly learned
attitude, heading, speed and g phic displays <u>COGNITIV</u> <u>Vision:</u> <u>Audition:</u> <u>Kinesthetic:</u> <u>Memory:</u> d references match those expected from map (and/or memor		Memory:	5 Memorization	
Phic displays COGNITIV Phic displays Vision: Audition: Audition: Kinesthetic: Memory: Nd references match those expected from map (and/or memory)	External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g			
M COGNITIV atral relatioship, tracking, graphic displays Vision: atral relatioship, tracking, graphic displays Vision: Audition: Audition: oded Kinesthetic: Perception that visual ground references match those expected from map (and/or memor UID, Map	Output Interface: Ancraft controls and throttles HUD Maps			
atral relatioship, tracking, graphic displays Vision: Audition: Audition: Kinesthetic: Perception that visual ground references match those expected from map (and/or memoi UID, Map	INPUT/SENSATION	COGNIT	IVE/PERCEPTU	JAL PROCESS
Audition: Audition: Kinesthetic: Memory: Perception that visual ground references match those expected from map (and/or memoi IUD, Map		Vision:	4 Spatial encoding,	, visual pattern recognition
Kinesthetic: oded Memory: Perception that visual ground references match those expected from map (and/or memoi IUD, Map		Audition:	0 Nonc	
oded Memory: Perception that visual ground references match those expected from map (and/or memoi IUD, Map		Kinesthetic:	0 None	
Perception that visual ground references match those expected from map (and/or memoi IUD, Map		Memory:	3 Spatial decoding	
Input Interface: Outside view, HUD, Map		om map (and/or mer	nory)	
	Input Interface: Outside view, HUD, Map			

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Select routing information on the HSD information in ormation in the HSD information information in the HSD information information in the HSD information information in the the HSD information in the	: Pilot 6 Allowal itable: Yes de: No ck to Higher Level G
ic HSD Friority: 6 Interruptable: Yes Resumable: No atgory: 0 None interruptable: Yes Resumable: No Freeds Back to Higher I Freeds Back I Freed	6 Allowal table: Yes de: No ck to Higher Level G
ategory: 0 None and Cue: Not Applicable itegory: 4 Spatial encoding, pattern recognition (reading maps, giving direct itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving direct aditions: General navigation is required Actions: HSD is crosschecked with maps ditions: Mission ends or more specific navigation aids are required (I.E. approach aids) Actions: Stop attending to goal Actions: Stop attending to goal UT/IBEHAVIOUR 0 None 0 None 1 Commit to memory (LTM and STM) ienced Variables Aircraft position, altitude, heading, speed and g äce: Aircraft controls and throtiles Aircraft displays (HUD,DDI,HSD) Maps äce: Aircraft controls and throtiles Aircraft displays (HUD,DDI,HSD) Maps	Interruptable: Yes Sheddable: No Resumable: No Shed If Late: Not Applicable Feeds Back to Higher Level Goal No No No Feeds Back to Higher Level Goal No Endersion Endersion Pack Declarative: Sensor displays and symbology interpretation Basitive Sensor displays and symbology interpretation Basitives Sensor displays and symbology interpretation Basitive
ategory: 0 None nal Cue: Not Applicable itegory: 4 Spatial encoding, pattern recognition (reading maps, giving direct itegory: 5 Spatial encoding, decoding, pattern recognition (reading maps, giving direct aditions: General navigation is required Actions: HSD is crosschecked with maps ditions: Mission ends or more specific navigation aids are required (I.E. approach aids) Actions: Stop attending to goal Actions: Stop attending to goal UT/IBEHAVIOUR 0 None 0 None	Resumable: No Shed If Late: Not Applicable Feeds Back to Higher Level Goal No KNOWLEDGE Declarative: Declarative: Sensor displays and symbology interpretation Basitic techniques Sensor displays and symbology interpretation Basitic techniques Situational: Situational: Situational:
ategory: 0 None nal Cue: Not Applicable itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving direct itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving direct diftions: HSD is crosschecked with maps diftions: HSD is crosschecked with maps diftions: Mission ends or more specific navigation aids are required (I.E. approach aids) Actions: Stop attending to goal UT/BEHAVIOUR 0 None 0 None 0 None 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and STM) enced Variables Arcraft position, altitude, heading, speed and g äce: Arcraft position, altitude, attitude, heading, speed and g äce: Arcraft position, altitude, heading, speed and g uT/SENSATION	Feeds Back to Higher Level Goal No Risk KNOWLEDGE Declarative: Sensor displays and symbology interpretation Basitechniques Situational: Situational:
ategory: 0 Nonc nal Cue: Not Applicable itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving direct itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving direct aditions: General navigation is required Actions: HSD is crosschecked with maps ditions: Mission ends or more specific navigation aids are required (I.E. approach aids) Actions: Stop attending to goal UT/BEHAVIOUR O 0 None 0 None 0 None 1 Commut to memory (LTM and STM) acted Variables Aircraft position, altritude, heading, speed and g ace: Aircraft position, altritude, attitude, heading, speed and g ace: Aircraft position, altritude, attitude, heading, speed and g ace: Aircraft position, altritude, heading, speed and g ace: Aircraft position, altritude, heading, speed and g	KNOWLEDGE Declarative: Sensor displays and symbology interpretation Basi techniques Situational:
nal Cue: Not Applicable itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving direct diffions: ditions: General navigation is required Actions: HSD is crosschecked with maps diffions: Mission ends or more specific navigation aids are required (I E, approach aids) Actions: Stop attending to goal UTT/BEHAVIOUR O 0 None 0 None 1 Community (LTM and STM) interced Variables Ancraft position, altitude, heading, speed and g ace: Ancraft position, altitude, displays (HUD,DDI,HSD) Maps OT/SENSATION OT/SENSATION	Declarative: Sensor displays and symbology interpretation Basi techniques Situational:
Itegory: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving direct inditions: General navigation is required Actions: General navigation is required Actions: HSD is crosschecked with maps Iditions: Mission ends or more specific navigation aids are required (I E. approach aids) Actions: Stop attending to goal IDIT/BEHAVIOUR O 0 None 0 None 1 Commit to memory (LTM and STM) ID One Psyci acted Variables Ancraft position, altrinde, attitude, heading, speed and g ace: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps UT/SENSATION UT/SENSATION	Sensor displays and symbology interpretation Basi techniques Situational:
nditions: General navigation is required Actions: HSD is crosschecked with maps iditions: Mission ends or more specific navigation aids are required (I.E. approach aids) Actions: Stop attending to goal Actions: Stop attending to goal UTYBEHAVIOUR 0 None 0 None 1 Commit to memory (LTM and STM) in Commit to memory (LTM and STM) in controls and throtiles Aircraft displays (HUD,DDI,HSD) Maps ace: Aircraft controls and throtiles Aircraft displays (HUD,DDI,HSD) Maps UT/SENSATION	Situational:
Actions: HSD is crosschecked with maps iditions: Mission ends or more specific navigation aids are required (I E. approach aids) Actions: Stop attending to goal UTYBEHAVIOUR 0 None 0 None 1 Commit to memory (LTM and STM) in Commit to memory (LTM and STM)	Situational:
inditions: Mission ends or more specific navigation aids are required (I E. approach aids) Actions: Stop attending to goal UTYBEHAVIOUR O 0 None 0 None 1 Commit to memory (LTM and STM) inced Variables Ancraft position, altitude, heading, speed and g ince: Ancraft displays (HUD,DDI,HSD) Maps UT/SENSATION UT/SENSATION	
Actions: Stop attending to goal UTYBEHAVIOUR 0 None 0 None 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and STM) intered Variables Aircraft position, altitude, heading, speed and g ace: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps UT/SENSATION	Specific route and/or map Mission Plan
UT/BEHAVIOUR O 0 None 0 None 0 None 0 None 1 Commut to memory (LTM and STM) Psyc renced Variables Ancraft position, altitude, heading, speed and g ace: Ancraft controls and throttles Ancraft displays (HUD,DDI,HSD) Maps UT/SENSATION	
 0 Nonc 0 None 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and STM) in Commit to memory (LTM and STM) 	VE/PERCEPTUAL PROCESS
0 None Psyc 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and STM) nenced Variables Aircraft position, altitude, heading, speed and g ace: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps UT/SENSATION	
	0 None
	COGNITIVE/PERCEPTUAL PROCESS
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays Vision: 4. Spatial encoding, visual p	
Audition: 0 None Audition: 0 None	
Kinesthetic: ⁰ None Kinesthetic: ⁰ None	0 None
Memory: 2.3 Spatially coded Memory: 3 Spatial decoding	
Internal Influenced Variables Perception that sensor information match those expected from map (and/or memory)	()

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Description: MAVDOC Conducto MAVDOC https://www.module.gov/anous/	uiai navigation systems are upuated, or spectric points are designated, Out	Goal ID: 7.2.6.2(c)	Source Goal: 7262(c)
NAVDSG Conduct a MAV/DSG hut fant calcuture the dammed WAVDONT/A B on the HSD			
INAVEST CONDUCT A NAVESO OF INSUSCECTING THE DESILED WATEFOLD TO ALL OF THE PLESS (THE		Operator: Pilot	Completion Time: 15
15) on the HSD	Pri	Priority: ³	Allowable Delay (K): Difficulty (D)
Over fly Designation First, ensure you are in NAV or A/G Master mode, then assign the TDC to the HSD and		Interruptable: No	Sheddable: No
depress the 1.D.C. when you are accurately positioned over the point you want to designate	Re	Resumable: Not Applicable	licable Shed If Late: Not Applicable
HUD Retrcle Designation Select the system in NAV or A/G Master Mode and undesignate Ensure that the weapons system is in AUTO, and assign the TDC to the HUD Manocuvre the a/c until the retrcle is over the target		Feeds Back to Higher Level Goal	: Level Goal No
Auditory Category: 0 None			<u>KNOWLEDGE</u>
External Cue: Not Applicable			Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	aps, giving directions)		Designation procedures Sensor displays and symbology interpretation
Initiating Conditions: The navigation systems require either enhanced precision or a temporary target designation	nporary target designation		
Initiating Actions: TDC is assigned to appropriate DDI or HUD TDC button is depressed and slewed, or NAVDES is selected on HSD	ssed and slewed. or NAVDES	s is selected on HSD	Situational:
			Mission Plan Target and/or IP knowledge (terrain.
Ending Conditions: Update is accepted or Designation is deemed acceptable			surrounding Target, smaller unique target features, weather, etc)
Ending Actions: Stop attending to goal			
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar	Psychomotor:	4 Spatial encoding	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Mcmorization	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g	50		
Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Mar	HSD) Maps, Radar, AMIRS, Mav display	ay	
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding,	4 Spatial encoding, visual pattern recognition
Audition: 0 Nonc	Audition:	0 None	
Kinesthetic: 1 1 Simple stimulus	Kinesthetic:	I Automatiscd, hig	1 Automatised, highly learned perception
Memory: 2.5 Complex operation	Memory:	5 Rccall	

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Annex I - CF18 Air to Groun	nd PCT	8 Air to Ground PCT Goal Analysis Results	
IP Number 7262(d) Goal: that the basic external navigation technique "watch/map/groud," is employed to ensure accurate navigation	Goal ID:	D: 7262(d) Source Goal: 7262(d)	
Description: The Elapsed Tune is checked and a point ahead of the associated Elapsed Tune marking on the map is selected for identification. When this point is identified on the ground then the navigation errors can be determined and a correction can be made. Common methods for correcting back to track or for getting back on time are Track corrections and Time corrections.		Operator: Pilot Completion Time: 20 Priority: 4 Allowable Delay (K): 1 75 Difficulty (D Interruptable: Ycs Sheddable: No Resumable: No Shed If Late: Not Applicable	me: 20 Difficulty (D) (o Not Applicable
	Fee	Feeds Back to Higher Level Goal No	
Auditory Category: 0 None External Cue: Not Applicable		KNOWLEDGE Declarative:	DGE
Pre	(suot	Basic navigation techniques	
Initiating Actions: A Tuncr(watch) is verified for the planned position, a map is venified for features expected at position, and outside references(Ending Conditions: Position is verifed or navigation corrections are made Ending Actions: Process is reinitiated, or other navigation techniques are employed	xpected at posit	on, and outside references(Situational: Specific route and/or map Mission Plan Weather conditions, visibility, winds, sun, terrain	lan Weather conditions,
OUTPUT/BEHAVIOUR	OGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
1 Simple Psyci	Psychomotor: Memory:	1 Automatised, highly learned 5 Memorization	
I Commut to memory (LIM and SIM) J Variables None A received controls and threather HI ID Marse	Menory:		
JT/SENSATION	COGNITIV Vision	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding visual pattern recognition	
	Audition:	0 None	
Kinesthetic: 0 Nonc Kin	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Perception that the map information(taken from watch information) corresponds to the visual ground references Input Interface: Outside view, HUD, map	orresponds to the	visual ground references	

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Annex I - CF18 Air to Gr	TDA buno	Air to Ground PCT Goal Analysis Results	
IP Number 7262(e) Goal: that the Time on Target is achieved accuratly through adjustments of aircraft speed and routing		Goal ID: 7 2 6 2(c) Source Goal: 7 2 6 2(c)	3
Description: Adjust G/S and routing to arrive at target at predetermined TOT	O P Int Re: Re:	Operator: Pilot Completion Time: 999 Priority: 4 Allowable Delay (K): 14 Difficulty (D Interruptable: No Sheddable: No Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No	me: 999 Difficulty (D) o Not Applicable
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: A "Time on Tareet" is mediated	gh level ops	KNOW Declarative: Sensor displays and symbology techniques	KNOWLEDGE Declarative: Sensor displays and symbology interpretation Basic navigation techniques
Initiating Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation Ending Conditions: TOT is achieved Ending Actions: Stop attending to goal	şatıon	Situational: Specific route and/or map Mission Plan	sion Plan
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 Simple Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	 Automatised, highly learned Memonization 	
External Influenced Variables Aircraft position, altitude, attitude, heading, speed and g Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	
Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	
Audition: ⁰ None	Audition:	0 None	
Kinesthetic: 0 None	Kinesthetic:	0 None	
0	Memory:	3 Spatial decoding	
Internal Influenced Variables Perception that groundspeed and route is appropriate for TOT Input Interface: Outside view, HUD, DDI, HSD, map			

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Annex I - CF18 Air to G	round PC1	8 Air to Ground PCT Goal Analysis Results	ysis Results
IP Number 7.2.6.2(f) Goal: that correct navigation is carried out and confirmed through NVG visual ground references		Goal ID: 7262(f)	Source Goal: 7262(f)
Conduct Navigation by visually finding ground references with NVG to verify that the correct routing is followed		Operator: Pilot	Completion Time: 20
	Pr	Priority: 6	Allowable Delay (K): Difficulty (D) 04
	In	Interruptable: Yes	Sheddable: No
	Ŗ	Resumable: No	Shed If Late: Not Applicable
	Fe	Feeds Back to Higher Level Goal	r Level Goal No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	g directions)		NVG lookout techniques. Sensor displays and symbology
Initiating Conditions: Navigation is required in Night/VMC conditions			
Initiating Actions. Outside NVG visual cues are crosschecked with mans to ensure correct navigation	gation		Situational:
cdam	- Euron		Canadia and a sure Manage Manage Day
Ending Conditions: IMC conditions are encountered or mission ends Ending Actions: Other navigation techniques(HSD) are used exclusively			spectric route and/or map Mission Plan weather conditions, visibility, ambient light
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None	Voice:	0 Nonc	
Psychomotor: 1 3 Complex and or unfamiliar	Psychomotor:	5 Memorization/re	5 Memonzation/recall, calculation, estimation, deduction, reasoning
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Mcmorization	
External Influenced Variables Arrcraft position, altitude, attitude, heading, speed and g			
Output Interface: Night Vision Goggles Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps	DI,HSD) Maps		
INPUT/SENSATION	COGNIT	COGNITIVE/PERCEPTUAL PROCESS	JAL PROCESS
Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding	4 Spatial encoding, visual pattern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: ⁰ None	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Perception that NVG visual ground references match those expected from map (and/or memory)	cted from map (and/	or memory)	

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Input Interface: Outside view through NVG's, HUD, Map

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IP Number 7 2 6 3(a) Goal: that all significent weather is avoided using both visual and sensor cues	or cues Goal ID:	ID: 7263(a)	Source Goal: 7 2 6 3(a)
Description: Montor by visually looking outside the cockput at significant weather build ups Adjust sensors parameter to		Operator: Pilot	Completion Time: 10
optimize weather detection and monitor displayed weather on the DDIs Avoid weather by changing routing and flight monthe		2	Allowable Delay (K): ¹¹ Difficulty (D)
	Inte	Interruptable: No	Sheddable: No
	Res	Resumable: Not Applicable	Shed If Late: Not Applicable
	Fee	Feeds Back to Higher Level Goal	l Goal No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 5 Memorization/recall, calculation, cstimation, deduction, reasoning, high level ops	evel ops		Baste Flying Sensor displays and symbology interpretation
Initiating Conditions: Significent weather is encountered			
Initiating Actions: Outstde cues and/or radar is monitored and arrcraft is manoeuvered to avoid weather	ther		Situational:
Ending Conditions: Weather is no longer a factor			Visual Lookout Cues Radar cues Study of weather forccast and actual weather
Ending Actions: Stop attending to goal			
OUTPUT/BEHAVIOUR	COGNITIVE	COGNITIVE/PERCEPTUAL PR	PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar Ps	Psychomotor:	4 Spatial encoding	
Memory: I Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Atteraft position, altitude, attitude, heading, speed and g			
Output Interface: Radar Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Vision: 1 1 Text, Dtal Reading	Vision:	3 Verbal encoding	
Audition: 0 None	Audition:	0 None	
Kinesthetic: 1 1 Sumple stimulus	Kinesthetic:	1 Automatised, highly learned perception	rned perception
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Perception that aircraft/formation will avoid significent weather			
Input Interface: Outside view, radar display, HUD			

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Annex I - CF18 Air to G	Fround PCT	8 Air to Ground PCT Goal Analysis Results	ults
IP Number 7 2 6 3(b) Goal: that all obstacles are avoided	G	Goal ID: 7263(b)	Source Goal: 7263(b)
Description: Monitor obstacles visually Avoid obstacles by changing routing and flight path	Q Y H X Y	Operator: Pilot Priority: 1 Allowable Interruptable: No Resumable: Not Applicable	Ď
Auditory Category: 0 Nonc External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: An obstacle is encountered	ע ב	reeus back to righer Level Guar Dec	Declarative: Basic Flying
Initiating Actions: Manocuvre to avoid obstacle Ending Conditions: Obstacle is avoided, or obstacle avoidance no longer becomes a factor (high level) Ending Actions: Stop attending to goal	,h level)	S Sp	Situational: Visual Lookout Cues Knowledge of area obstacles (map study) Spectfic mission plan
OUTPUT/BEHAVIOUR Vaire: 0 Nanc	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	SS
Farra	Psychomotor: Memory:	4 Spatial encoding 5 Memorization	
External Influenced Variables Aircraft position, altitude, attitude, heading, speed and g Output Interface: Aircraft controls and throttles HUD Maps			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	ESS
	Audition:	0 None	
Kinesthetic: 1 Sumple stimulus Memory: 2 1 Accessible, familiar Internal Influenced Variables Perception that aircraft is not in conflict with an obstacle	Kinesthetic: Memory:	 Automatused, highly learned perception Automatused 	rception
Input Interlace: Uutside view, HUD			

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		Annex I - CF18 Air to G	round PCT	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7 2 6 3(c)	Goal:	that all terrain is avoided	Goa	Goal ID: 7263(c)	Source Goal: 7263(c)
Description: At all times while flying in the low-level environ visually Avoid terrain by changing flight path	a the low-leve / changung fli	Description: At all times while flying in the low-level environment the primary task is terrain clearance Monitor terrain visually Avoid terrain by changing flight path		Operator: Pilot Priority: 1 Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 999 Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, hi Initiating Conditions: Terran is enconneced	 0 None Not Applicable 1 Automatized 	None et Applicable Automatized, highly learned (casy to do for a trained person)			KNOWLEDGE Declarative: Baste Flying
Initiating Actions: Manocuvre to avoid terrain Ending Conditions: Terrain is avoided or no lon Ending Actions: Stop attending to goal	Manocuvre Terrain is av Stop attendir	Initiating Actions: Manocuvre to avoid terrain Ending Conditions: Terrain is avoided or no longer becomes a factor (high level) Ending Actions: Stop attending to goai			Situational: Visual Lookout Cues Knowledge of area terrain (map study) Specific mission plan
OUTPUT/BEHAVIOUR	HAVIOU		COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice: 0	0 Nonc		Voice:	0 None	
Psychomotor: 12 I Memory: 1 C	 Difficult but familiar Commit to memory (2 Difficult but familiar1 Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spatial encoding 5 Memorization	
External Influenced Variables Aucraft position, altitude, a Output Interface: Aucraft controls and throttles HUD Maps	'ariables craft controls	External Influenced Variables Aucraft position, altitude, attitude, heading, speed and g Output Interface: Aucraft controls and throttles HUD Maps			
INPUT/SENSATION Vision: ^{2 Perpheral}	NSATION Penpheral		COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automatised, highly learned perception	ROCESS ted perception
Audition: 1	Tone or simp	Tone or simple auditory signal	Audition:	1 Automatised, highly learned perception	red perception
Kinesthetic: 11	Simple stimulus	lus	Kinesthetic:	1 Automatised, highly learned perception	red perception
Memory: 2.1 Accessible, far Internal Influenced Variables Pe International Outside view HUD	చ 🛱	familiar Perception that aircraft is not in conflict with terrain 1D	Memory:	1 Automatised	
Input uncerates and	100 VIV				

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Annex I - CF18 Air to Gr	ound PCT	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7263(c) Goal: that all other aircraft are avoided	Go	Goal ID: 7263(c)	Source Goal: 7263(c)
Description: Monitor other Aircraft by establishing cross check between visual look out and sensor information displayed on the HUD and DDIs Avoid other Aircraft by changing flight path		Operator: Pilot Priority: 1 Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 999Allowable Delay (K):Difficulty (D)Sheddable:No:abieSheddable:Level GoalNo
Auditory Category: 0 Nonc External Cue: Not Applicable Cognitive Category: 2 Passive monitoring of speech/auditory signals			<u>KNOWLEDGE</u> Declarative: Bastc Flying
Initiating Conditions:An aurcraft or formation is encounteredInitiating Actions:Manoeuvre to avoid aurcraftEnding Conditions:Aurcraft is avoidedEnding Actions:Stop attending to goal			Situational: Visual Lookout Cues Spectfic mission plan
	COGNITIV Voice: Psychomotor:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None vehomotor: 4 Spatial encoding	OCESS
Memory: 1 Commut to memory (LTM and STM) External Influenced Variables Aircraft position, altitude, attitude, heading, speed and g Output Interface: Aircraft controls and throttles HUD Maps	Memory:	5 Memorization	
INPUT/SENSATION Vision: 2 Penpheral	COGNIT) Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automatised, highly learned perception	ROCESS ned perception
Audition:5 Speech input (attended to, salient to the primary task)Kinesthetic:1 1 Simple stimulusMemory:2 1 Accessible, familiar	Audition: Kinesthetic: Memory:	5 Verbal decoding, speech recognition1 Automatised, highly learned perception1 Automatised	recognition ned perception
Internal Influenced Variables Perception that aircraft is not in conflict with another aircraft			

Input Interface: Outside view, HUD

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Annex I - CF18 Air to Groun	8 Air to Ground PCT Goal Analysis Results	sis Results
IP Number 7.2.7 1(a) Goal: that the desired radar modes and parameters are set for search and monitored by visually referencing the radar display on the right DDI Description.	Goal ID: 727 1(a)	Source Goal: 7271(a)
Confirm that the desired Radar modes and parameters are set for scarch Monitor radar visually on the DDIs Adjust radar azimuth and elevation search to cover assigned airspace	Operator: Pilot Priority: 4 Allowable Interruptable: Yes Resumable: Yes Feeds Back to Higher Level Goal	Completion Time: 3 Allowable Delay (K): 1 75 Difficulty (D) Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission		KNOWLEDGE Declarative: Arrcraft operating procedures, standard operating procedures, radar displays/controls
Initiating Actions: Pilot observes the radar search parameters on the radar display on the right DDI Ending Conditions: Tactical phase of the mission ends Ending Actions: Perform other non-tactical mission tasks		Situational: Tactıcal sıtuatıon, aırcraft altıtude/speed, mıssıon objectıves/requirements, weather, terraın
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None Psychomotor: 1 1 Simple Psych	Voice: 0 None Psychomotor: 1 Automatised, highly learned	ıly icamed
8	Memory: 5 Memorization	
External Influenced Variables radar search modes, radar antenna clevation, radar azimuth, other radar parameters Output Interface: DDI, HOTAS, APG-73	parameters	
	IIV	AL PROCESS
Vision: 1 I Text, Dial Reading Audition: 0 None	Vision: 3 Verbal encoding Audition: 0 None	
Kinesthetic: 1 Simple stimulus Kinesthetic: I Automatised Memory: 23 Spatially coded 3 Spatial deco Internal Influenced Variables Belief that the assigned radar search parameters have been set and are being monitored and mantained	Kinesthetic: 1 Automattsed, hig Memory: 3 Spatial decoding we being monitored and maintained	 Automatised, highly learned perception Spatial decoding and maintained
C	3	

IP Number 7.2.7 1(b) Goal: that radar contact on formation members, the pilot will visually reference his radar display on the right DDI He will also adjust the settings on this APG 73, and of visually reference his radar display on this right DDI He will also adjust the settings on this APG 73, most notably the azimuth, PRF, and elevation (using either HOTAS) or monitoridar contact on formation members, the pilot will visually reference his radar display on his right DDI He will also adjust the settings on this APG 73, most notably the azimuth, PRF, and elevation (using either HOTAS) or manual pushbuttons), to allow him to maintain radar contact on friendly formation members Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Radar contact with formation members is established Initiating Conditions: Radar contact on formation members is catablished Initiating Actions: Plot on the mantion members is catablished Initiating Conditions: Radar contact on formation members is catablished Initiating Conditions: Radar contact on formation members is catablished Initiating Conditions: Radar contact on formation and current radar parameters: Eucling Conditions: Radar contact of formation members is catablished Initiating Conditions: Radar contact on formation members is catablished	ed and maint ay on his ng ising cither F ising cither F unnent radar	Goal ID: 7271(b) Operator: Pilot Priority: 4 Allowable Interruptable: Yes Resumable: Yes Feeds Back to Higher Level Goal Clas	Source Goal: 7271(b) Completion Time: 4 Allowable Delay (K): 1 67 Difficulty (D) Sheddable: No Sheddable: Not Applicable Shed If Late: Not Applicable Shed If Late: Not Applicable Shed If Late: Standard operating procedures, standard operating procedures, standard operating procedures, radar displays/controls Classified arcraft operating procedures, radar displays/controls
To monitor radar contact on formation members, the pilot will visually reference to monitor radar contact on friendly for or manual pushbuttons), to allow him to maintain radar contact on friendly for or manual pushbuttons), to allow him to maintain radar contact on friendly for manual pushbuttons), to allow him to maintain radar contact on friendly for the zzimuth, PRF Auditory Category: 0 None Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation Initiating Conditions: Radar contact with formation members is establis Initiating Actions: Rudar contact on formation members is catablis Initiating Actions: Radar contact on formation members no longer regending Actions: Pading Conditions: Pilot returns radar to assigned scarch parameters OUTPUT/BEHAVIOUR Voice: 0 None Psychomotor: 1 2 Difficult but familiar Memory: 1 Commit to memory (LTM and STM)	ay on his ng sing cither F oning, high l	Pilot e: Ycs 0 Higher I	Completion Time: 4 owable Delay (K): 1 67 Difficulty (D) Sheddable: No Sheddable: No Sheddable: No Sheddable: No el Goal No No KNOWLEDGE Ender displayscontrols Ancraft operating procedures, standard operating procedures, classified ancraft operating procedures, radar displayscontrols Situational: Tactueal struation, phase of mission objectives/requirements
Auditory Category: 0 None External Cue: Not Applicable External Cue: Not Applicable Cognitive Category: 5 Memorzaton/recall, calculation, estimatio Initiating Conditions: Radar contact with formation members is establis Initiating Actions: Radar contact on formation members no longer reguling Actions: Radar contact on formation members no longer reguling Actions: Pilot returns radar to assigned search parameters OUTPUT/BEHAVIOUR 0 None Voice: 0 None Psychomotor: 1 2 Difficult but familiar Memory: 1 Commit to memory (LTM and STM)	eduction, reasoning, high l mation and current radar	Feeds Back to Higher Lev	el Goal No <u>EXNOWLEDGE</u> Declarative: Arrcraft operating procedures, standard operating procedures, classified arrcraft operating procedures, radar displays/controls classified arrcraft operating procedures, radar displays/controls
Auditory Category: 0 Nonc External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimatio Initiating Conditions: Radar contact with formation members is establis Initiating Conditions: Radar contact with formation members is catablis Initiating Actions: Right DDI is visually referenced for radar contact Ending Conditions: Radar contact on formation members no longer repling Actions: Pading Conditions: Pilot returns radar to assigned search parameters OUTPUT/BEHAVIOUR Voice: Voice: 0 Psychomotor: 1 Memory: 1	cduction, reasoning, high l mation and current radar		KNOWLEDGE Declarative: Ancraft operating procedures, standard operating procedures, classified ancraft operating procedures, radar displays/controls classified ancraft operating procedures, radar displays/controls Classified ancraft operating procedures, radar displays/controls Situational: Tactocal struation, phase of mission, target information (bearing, range, altitude, aspect), mission objectives/requirements
External Cue: Not Applicable External Cue: Not Applicable Initiating Conditions: 5 Memorrzation/recall, calculation, estimation Initiating Conditions: Radar contact with formation members is establis Initiating Actions: Right DDI is visually referenced for radar contact Ending Conditions: Radar contact on formation members no longer rei Ending Actions: Phlot returns radar to assigned scarch parameters OUTPUT/BEHAVIOUR Voice: Voice: 0 None Psychomotor: 12 Difficult but familiar Memory: 1 Commit to memory (LTM and STM)	eduction, reasoning, high l imation and current radar		Dectar ative: Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, radar displays/controls Situational: Tactical situation, phase of mission, target information (bearing,range, altitude, aspect), mission objectives/requirements
Initiating Actions: Right DDI is visually referenced for radar contact Ending Conditions: Radar contact on formation members no longer re- Ending Actions: Phlot returns radar to assigned search parameters OUTPUT/BEHAVIOUR Voice: 0 None Psychomotor: 1 2 Difficult but familiar Memory: 1 Commit to memory (LTM and STM)	lation and current radar		Situational: Tactical situation, phase of mission, target information (bearing,range,altitude,aspeet), mission objectives/requirements
-		COGNITIVE/PERCEPTUAL PROCESS	ROCESS
-	Voice:	0 None	
	Psychomotor:	4 Spatial encoding	
	Memory:	5 Memorization	
External Influenced Variables Radar search and track modes, radar a Output Interface: DDI, HOTAS, APG-73	Radar search and track modes, radar antenna clevation, radar azimuth, other radar parameters. Other formation member's RWR APG-73	parameters Other formation n	ncmbcr's RWR
INPUT/SENSATION	COGN	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	splays Vision:	4 Spatial encoding, visual pattern recognition	al pattern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: 1 1 Sumple stumulus	Kinesthetic:	1 Automatised, highly learned perception	arned perception
Memory: 2.4 Semantically coded	Memory:	3 Verbal decoding	
Internal Influenced Variables Belief that radar contact is being maint	Belicf that radar contact is being maintained on other formation members		

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Annex I - CF18 Air to Grou	8 Air to Ground PCT Goal Analysis Results	lysis Results
IP Number 7 2 7 1(h) Goal: that the pilot accurately monitors and interprets the factical Link-16 information displayed on his HSD	6 Goal ID: 7271(h)	Source Goal: 7271(h)
The pilot will visually reference his HSD to monitor the Link 16 display	Operator: Pilot	Completion Time: 5
	Priority: 4	Allowable Delay (K): ¹⁵ Difficulty (D)
	Interruptable: Yes	Sheddable: No
	Resumable: Yes	Shed If Late: Not Applicable
	Feeds Back to Higher Level Goal	er Level Goal No
Auditory Category: 0 None		KNOWLEDGE
External Cue: Not Applicable		Declarative:
Cognitive Category: 5 Memorization/recall, calculation, cstimation, deduction, reasoning, high level ops	/el ops	Aurcraft operating procedures, standard operating procedures,
Initiating Conditions: Tactıcal phase of the mission begins Link 16 information is required by the pilot		classified anertal operating procedures, Link to displays controls
Initiating Actions: Pilot visually references the Link 16 display on the HSD		Situational:
Fuding Conditions: Unk 16 information is no longer required and/or the factoral whose of the mission ords	hde	Tactical situation, phase of mission, mission
Ending Actions: Current mission tasks performed Tactical Link 16 information, displayed on the HSD, is no longer monitored	sues ISD, is no longer monitored	objectives/requirements, correlation of displayed information with information displayed from other sources
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Voice: 0 None	Voice: 0 None	
Psychomotor: 0 None Psyc	Psychomotor: 0 None	
Memory: 1 Commit to memory (LTM and STM)	Memory: 5 Memorization	
External Influenced Variables Link 16 display settings and parameters		
Output Interface: HSD, LINK-16		
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS	UAL PROCESS
Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision: 4 Spatial encodin	Spatial encoding, visual pattern recognition
Audition: 0 Nonc	Audition: 0 None	
Kinesthetic: ⁰ None Ki	Kinesthetic: 0 None	
Memory: 2.4 Semantically coded	Memory: 3 Verbal decoding	
Internal Influenced Variables Belief that the tactical situation is being monitored on the Link 16 display, and all relevant tactical information is being interpreted by the pilot	lay, and all relevant tactical informs	tton is being interpreted by the pilot
Input Interface: Link 16 display on HSD, correlation of other tactical information (radar/AMIRS/external agencies) with Link 16 displayed information	l agencies) with Link 16 displayed	nformation

Annex I - CF18 Air to Grou	Air to Ground PCT Goal Analysis Results	
IP Number 7272(a) Goal: that the assigned AMIRS search parameters are set and monitored by visually referencing the AMIRS display on the left DDI	Goal ID: 7272(a) Source Goal: 7272(a)	: 7272(a)
Description: The pilot will set his assigned AMIRS search parameters via HOTAS or manual selection. He will monitor and maintain these parameters by visually checking the AMIRS display on the left DDI. If they need adjusting, he will accomplish this via HOTAS/manual selection of the AMIRS search parameters on the left DDI accomplish this via HOTAS/manual selection of the AMIRS search parameters on the left DDI	Operator: Pilot Priority: 4 Allowable Delay Interruptable: Resumable: No Feeds Back to Higher Level Goal No	Completion Time: ² (K): ¹ 75 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Applicable	Declarative:	KNOWLEDGE
Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Tactical phase of the mission begins. Tactical IR imagery is required by the pilot while operating in day/night VMC conditions		Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, AMIRS displays/controls
Initiating Actions: TDC assigned to the left DDI Pilot visually checks the current AMIRS search parameters displayed on the left DDI Ending Conditions: Tactical phase of mission ends AMIRS information no longer required IMC flight conditions encountered Ending Actions: TDC re-assigned away from left DDI AMIRS display no longer monitored.	left DDI	Situational: Tactıcal sıtuatıon, aırcraft altıtude/speed, mıssıon objectıves/requirements, atmospheric conditions, terraın, tıme of day
<u>OUTPUT/BEHAVIOUR</u>	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None Psychomotor: 11 Simple Psyc	Voice: 0 None Psvchomotor: 1 Automatised, highly learned	
1 Commit to memory (LTM and STM)		
External Influenced Variables AMIR search modes, AMIRS search parameters Output Interface: DDI, HOTAS, AMIRS		
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS	
Vision: 1 1 Text, Dial Reading Audition: 0 Nonc	Vision: 3 Verbal encoding Audition: 0 None	
Kinesthetic: 1 1 Simple stimulus Ki	Kinesthetic: 1 Automatised, highly learned perception	
	Memory: 3 Spatial decoding	
Internal Influenced Variables Detict that the assigned Ability search parameters have been set and are being mannaned Input Interface: AMIRS display on the left DDI	ocing mainten	

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Annex I - CF18 Air to Ground PCT Goal Analysis Results	und PCT	Goal Analy	sis Results
IP Number 7 2 7 2(b) Goal: that AMIRS contact on formation members is displayed and monitored by visually referencing the AMIRS display on the LEFT DDI		Goal ID: 7272(b)	Source Goal: 7272(b)
To monitor AMIRS contact on formation members, the pilot will visually reference his AMIRS display on his left DDI He will also adjust the settings on his AMIRS, using either HOTAS or manual pushbuttons, to allow him to maintain AMIRS contact on formation members		Operator: Pilot Priority: 4 Interruptable: Resumable: No	ñ
Auditory Category: 0 None External Cue: Not Applicable S Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: AMIRS contact with formation members is established		Feeds Back to Higher Level Goal Dec Aur	 Level Goal No <u>KNOWLEDGE</u> Declarative: Anreraft operating procedures, standard operating procedures, classified aircraft operating procedures, AMIRS displays/controls
Initiating Actions: Left DDI is visually referenced for AMIRS contact information and current AMIRS parameters Ending Conditions: AMIRS contact on formation members is no longer required Ending Actions: Return AMIRS to assigned search parameters	IRS parameters		Situational: Mission objectives/requirements, tactical situation, environmental conditions, time of day, target information (bearing,range, aspect, altitude)
OUTPUT/BEHAVIOUR C Voice: 0 Nonc Psychomotor: 1.2 Difficult but familiar	COGNITIVI Voice: Psychomotor:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None vchomotor: 4 Spatial encoding	L PROCESS
Memory: 1 Commit to memory (LTM and STM) External Influenced Variables AMIRS search and track modes, AMIRS search parameters Output Interface: DDI, HOTAS, AMIRS	Memory:	5 Memorization	
INPUT/SENSATION Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays Audition: 0 None	COGNITIY Vision: Audition:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recog Audition: 0 None	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition 0 None
Kinesthetic: 1 Nutomatised, highly learned percepto Memory: 2.4 Semantically coded Internal Influenced Variables Belief that AMIRS contact on other formation members is being maintained 3 Verbal decoding Internal Influenced Variables Belief that AMIRS contact on other formation members is being maintained 3 Verbal agency/communications) Input Interface: AMIRS display on left DDI correlated with other information (radar/visual/ar-to-arr tacan/Link-16/external agency/communications)	Kinesthetic: Memory: untaıned Jal/ar-to-aır tacan/	 Automattsed, higl Verbal decoding Link-16/external agen 	 Automattsed, highly learned perception Verbal decoding Vertral agency(communications)
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		Annex I - CF18 Air to Ground PCT Goal Analysis Results	d PCT Go	al Analysis	Results
	7 2 7 3(a) Goal:	that no visually unobserved bogeys/bandits are able to engage the formation	Goal ID:	7 2 7 3(a)	Source Goal: 7273(a)
The pilot will maint	ain a methodical visi	The pilot will mantain a methodical visual search pattern throughout the entire mission to ensure that no	Operator:	: Pilot	Completion Time: 5
unobserved bogcys	bandits are able to er	unobserved bogeys/bandits are able to engage his formation without being visually observed	Priority:	9 Allo	Allowable Delay (K): Difficulty (D)
He accomplishes th	s by developing a se	He accomplishes this by developing a scanning pattern that allows him to scan all of the airspace around his aircraft		Interruptable: No	Sheddable: No
in a democrate, sequence of the second secon	contai fastilon FOT c.	in a denotate, sequential fastion. For example, he may start by observing its deep six o clock position, then scan out the left side of the canopy until arriving at the 12 o'clock position. He will repeat the same process on the right		Resumable: Not Applicable	Shed If Late: Not Applicable
side of the aircraft, then scarch the repeated throughout the mission	hen scarch the extre- the mission	side of the aircraft, then search the extreme vertical above and below his aircraft. This visual search pattern is then repeated throughout the mission		Feeds Back to Higher Level Goal	l Goal No
Auditory Category:	gory: 0 Nonc				KNOWLEDGE
External Cue:	Cue: Not Applicable	olicable			Declarative:
Cognitive Category:	4	Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	us)		Standard operating procedures, visual scan technique.
Initiating Conditions:	itions: Tactical phase of proximity exists	Tactical phase of mission begins Operating in day, VMC flight conditions Risk of bogeys/bandits operating in near proximity exists	bogeys/bandits oper	ating in near	
Initiating Actions:		Begin visual search and scan patterns			Situational:
Ending Condi	tions: Tactical pha-	Ending Conditions: Tactical phase of mission ends IMC flight conditions are encountered Reaction to observed bogey/bandit is executed	bscrved bogey/bandr	t is executed	Mission objectives/requirements, tactical situation, environmental conditions
Ending Ac	tions: Stop visual s	Ending Actions: Stop visual scarch and scan patterns			
OUTPU	OUTPUT/BEHAVIOUR		GNITIVE/PEH	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice:	0 Nonc		Voice: 0 None	ne	
Psychomotor:	11 Simple	Psychor	Psychomotor: 1 Au	1 Automatised, highly learned	med
Memory:	1 Commit to me	1 Commit to memory (LTM and STM)	Memory: 5 MG	5 Mcmorrzation	
External Influenced Variables		Nonc			
Output Interface:	: None				
LUUI	INPUT/SENSATION		OGNITIVE/P	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Vision:	1 2 Pattern, spati:	1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision: 4 Sp	4 Spattal encoding, visual pattern recognition	pattern recognition
Audition:	0 None	Ац	Audition: 0 Nonc	nc	
Kinesthetic:	0 None	Kines	Kinesthetic: 0 Nonc	nc	
Memory:	2 3 Spatially coded		Memory: 3 Sp	3 Spatial decoding	
Internal Influenced Variables		Belief that a visual search pattern is being maintained, and that no unobserved bogeys/bandits have been able to engage the formation	rvcd bogcys/bandits	have been able to en	gage the formation
Input Interface:	Visual environmen	Input Interface: Visual environment surrounding aircraft, correlation of other tactical information			

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	Annex I - CF18 Air to Ground PCT Goal Analysis Results	ind PCT	Goal Analy	sis Results	
IP Number 7273(b)	(b) Goal: that visual contact with formation members is maintained	Goa	Goal ID: 7.2 7 3(b)	Source Goal: 7273(b)	
Description: The pilot will use non members.	Description: The pilot will use normal visual cues to allow him to monitor and maintain visual contact with other formation members.		Operator: Pilot Priority: 9 Interruptable: No	Completion Time: 2 Allowable Delay (K): Difficu Sheddable: No	me: 2 Difficulty (D) o
		Ree Fee	Resumable: Not Applicable Feeds Back to Higher Level Goal	cable Shed If Late: Not Applicable Level Goal No	lıcable
Auditory Category: External Cuo-	Dry: 0 None			<u>KNOWLEDGE</u> Declarative:	OGE
Cognitive Category:	•	ctions)		Pattern recognition, visual scan technique	aupti
Initiating Conditi	Initiating Conditions: Visual contact with formation members is established				
Initiating Activ Ending Conditiv Ending Activ	Initiating Actions: Visual cues (canopy codes, geographical reference, relative bearing) are used to maintain visual contact. Ending Conditions: Visual contact with formation members is no longer required or lost Ending Actions: Visual cues used to maintain visual contact on formation members are disregarded Current mission tasks are performed	naintain visual c d Current missi	ontact. on tasks are performed	Situational: Tactical situation, time-of-day, environmental conditions, relative movement	nuncrital conditions, relative
OUTPUT	OUTPUT/BEHAVIOUR	OGNITIVI	COGNITIVE/PERCEPTUAL PROCESS	PROCESS	
Voice:	0 None	Voice:	0 None		
Psychomotor:	11 Simple Psyc	Psychomotor:	1 Automatised, highly learned	ly learned	
Memory:	1 Commut to memory (LTM and STM)	Memory:	5 Memonzation		
External Influenced Variables Output Interface: None	ed Variables None None				
/LNANI	INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS	
Vision:	1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding,	4 Spatial encoding, visual pattern recognition	
Audition:	0 None	Audition:	0 None		
Kinesthetic:	0 None Kii	Kinesthetic:	0 None		
Memory:	2 3 Spatially coded	Memory:	3 Spatial decoding		
Internal Influenced Variables	d Variables Belief that visual contact is being maintained on other formation members	bers			
Input Interface:	Input Interface: Visual environment surrounding aircraft, correlation of other tactical information (radar/visual/air-to-air tacan/Link-16/external agency/communications)	/visual/air-to-ai	- tacan/Link-16/externa	l agency/communications)	

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Description: The pilot will maintain an NVG visual scarch pattern throughout all phases of a night mission to unobscrved bogeys/bandits are able to engage his formation without being visually observed			Source Goal.	
The pilot will maintain an NVG visual search pattern throughout all phases of a night mission to unobserved bogeys/bandits are able to engage his formation without being visually observed				
unobscrvcd bogeys/bandits are able to engage his formation without being visually observed	mission to ensure that no 0	Operator: Pilot	Completion Time: 7	
	P	Priority: ⁹ Allo	Allowable Delay (K): Difficulty (D)	(Q
He accomplishes this by developing a scanning pattern that allows him to scan all of the airspace around his aircraft		Interruptable: No	Sheddable: No	
in a deliberate, sequential fashion For example, he may start by observing his deep six o'clock pe				-
out the left side of the canopy until arriving at the 12 o'clock position. He will repeat the same process on the right		Kesumable: Not Applicable	Shed If Late: Not Applicable	le
suce of the articlarit, then search the extreme vertical above and below his aircraft. This NVU visual search partern is then repeated throughout the mission		Feeds Back to Higher Level Goal	Goal No	
Auditory Category: 0 None			KNOWLEDGE	L
External Cue: Not Applicable			Declarative:	
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	s, giving directions)		NVG operating procedures, standard operating procedures, visual scan technique with NVGs.	ating procedures, visual
Initiating Conditions: Tactucal phase of mussion begins Operating in night, VMC flight conditions Significant prob Of bogeys/bandits operating in near proximity exists	onditions Significant prob (Of bogeys/bandits operating		
Initiating Actions: Beeln visual search and scan patterns with NVGs			Situational:	
	-	-	Mission objectives/requirements, tactical situation, environmental	utuation. environmental
Ending Conditions: 1 actical phase of mission chos 1MC flight conditions are encountered. Reaction to observed bogey/bandit begins Ending Actions: Stop visual search and scan patterns with NVGs	ed Keaction to observed bog	şcy/bandıt begins	conditions	
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	OCESS	
Voice: 0 Nonc	Voice:	0 None		
Psychomotor: 1 1 Simple	Psychomotor:	1 Automatised, highly learned	ned	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memorization		
External Influenced Variables NVG settings, cockpit lighting, exterior aircraft lighting				
Output Interface: NVGs				
INPUT/SENSATION	COGNIT	COGNITIVE/PERCEPTUAL PROCESS	ROCESS	
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	pattern recognition	
Audition: 0 None	Audition:	0 None		
Kinesthetic: ⁰ None	Kinesthetic:	0 None		
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding		

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IP Number 7.2.7.3(g) Goal: that visual contact of other formation members will be maintained using NVGs		Goal ID: 7273(g)	Source Goal: 7273(g)
Description: The NVG-commed olot will use normal visual cues to allow him to monitor and maintain visual contact with		Operator: Pilot	Completion Time: 7
other formation members in addition, he will use the discreet exterior lighting on other formation member's aircraft		Priority: 9 All	Allowable Delay (K): Difficulty (D)
	ų	Interruptable: No	Sheddable: No
	R	Resumable: Not Applicable	c Shed If Late: Not Applicable
	F	Feeds Back to Higher Level Goal	el Goal No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	s, giving directions)		NVG operating procedures, standard operating procedures, visual scan technicute with NVGs
Initiating Conditions: NVG contact with formation members is established using NVGs			
Initiating Actions: Visual cues (canopy codes, geographical reference, relative bearing) are used to maintain NVG contact on formation members	are used to maintain NVG	contact on formation member	
Ending Conditions: NVG contact with formation members is no longer required or is lost Ending Actions: Visual cues used to maintain NVG contact on formation members are disregarded Current mission tasks performed	t e disregarded Current mis.	sion tasks performed	Mission objectives/requirements, tactical situation, environmental conditions
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 1 Simple	Psychomotor:	1 Automatised, highly learned	amed
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memonzation	
External Influenced Variables NVG settings, cockpit lighting, exterior aircraft lighting			
Output Interface: NVGs			
INPUT/SENSATION	COGNIT	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	al pattern recognition
Audition: 0 Nonc	Audition:	0 None	
Kinesthetic: 0 None	Kinesthetic:	0 None	
Memory: 2.3 Spattally coded	Memory:	3 Spatial decoding	

Annex I - CF18 Air to Grou	8 Air to Ground PCT Goal Analysis Results	iis Results
IP Number 7 3 2 2(a) Goal: that the FAC target description is received and confirmed	Goal ID: 7322(a)	Source Goal: 7322(a)
Description: The formation lead will normally ensure that the appropriate sensors are slaved to the target coordinates before the target description brief from the FAC begins. Once ready for the briefing, the FAC will describe the target to the pilots. Referring to the target area displayed on the DDIs, the pilots will confirm that the target described matches the image displayed to them.	re the Operator: Pilot the Priority: 3 Allo ches Interruptable: No Resumable: Not Applicable	Completion Time: 120 Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
Auditory Category: 4 Speech Input (primary task) External Cue: Yes	Feeds Back to Higher Level Goal	Level Goal No <u>KNOWLEDGE</u> Declarative:
5 Memorization/recall, calculation, estimation, dcdu Radio contact with FAC established. Within a specified the target coordinates	iction, reasoning, high level ops range of the target Sensors have clear LOS target, and are slaved to	
Initiating Actions: FAC beguts target description brief Ending Conditions: Following briefing, formation members confirm that the target area displayed on their DDI matches the target area they have b Ending Actions: Update target designations using HOTAS Complete air-to-ground checks Prepare for weapons delivery	their DDI matches the target area they lie for weapons delivery	Situational: ave b Significant features in target area, target specifics, relative sizes/distances between target and surrounding objects, terrain, environmental conditions
OUTPUT/BEHAVIOUR Voice: 1 Voice Output	COGNITIVE/PERCEPTUAL PROCESS Voice: 3 Speech production	PROCESS
 Simple Commit to memory (LTM and STM) 	1 5	y leamed
External Influenced Variables secure radio transmission using Have Quick II, observe sensor image Output Interface: COMM 1/2, Have Quick II, HOTAS, DDIs, APG-73, AMIRS, LINK-16, EGI	II, observe sensor ımagery dısplayed on DDIs, maps of target area RS, LINK-16, EGI	17
INPUT/SENSATION Vision: 1.2 Pattern, spattal relattoship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recogn	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
Audition: 4 Auditory localisation Kinesthetic: 0 None	Audition:4 Spatial encodingKinesthetic:0 None	
Memory: 24 Semantically coded Memory: 3 Verbal decoding Internal Influenced Variables Belief that the target description has been received and understood from the FAC, and confirmed via the use of on board sensor imagery	Memory: 3 Verbal decoding on the FAC, and confirmed via the use o	f on board sensor imagery
Input Interface: Comparison of target description with target plot on maps, image of target displayed by on board systems, significant features in the target area, unique identifying target features	on board systems, significant features 1	the target area, unique identifying target features

Annex I - CF18 Air to Groun	Air to Ground PCT Goal Analysis Results	sis Results
IP Number 7.3 2 2(b) Goal: that the target is accurately and correctly identified using aircraft sensors	Goal ID: 7322(b)	Source Goal: 7322(b)
The primary sensors for target detection in the CF-18 are the radar and the AMIRS The radar is used to find targets that are very radar reflective and/or when the weather conditions do not allow the AMIRS to provide an infrared image of the target In nearly all other cases the AMIRS will be the sensor of choice for finding the target	gets Operator: Pilot Priority: 3 Interruptable: No	Completion Time: ¹²⁰ Allowable Delay (K): Difficulty (D) Sheddable: No
Prior to arriving in the target area, the pilot ensures that the target coordinates are entered correctly into the aircraft database. He also confirms the accuracy of his EGI system, and updates the system to improve navigation accuracy, if necessary	. •	No
Ŭ		KNOWLEDGE
External Cue: Not Applicable		Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Inside a specific range from target Target is within LOS of sensors Sensor parameters verified and set	ops ers verified and set	Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, sensor displays/controls, tactics, anticipation of target representation on display for conditions
		of the day
Initiating Actions: NAV Designate target coordinates and slave appropriate sensor to the target designation	tion	Situational:
Ending Conditions: Target is acquired Ending Actions: Pilot communicates with FAC that he has acquired target, and begins to manocuver	and begins to manocuver to weapons release parameters	General target area features, target specifics, range/bearing to the target, environmental conditions, confirming target ID with maps/imagery, IR/radar significant features in target area
OUTPUT/BEHAVIOUR CC	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Voice: 0 None	Voice: 0 None	
Psychomotor: 1 2 Difficult but familiar Psych	Psychomotor: 4 Spatial encoding	
Memory: 1 Commit to memory (LTM and STM)	Memory: 5 Memonzation	
External Influenced Variables Radar/AMIRS parameters and settings, DDI brightness/contrast, HOTAS	S	
Output Interface: HOTAS, DDIs, HSD, HUD, APG-73, AMIRS, LINK-16, EGI		
<u>INPUT/SENSATION</u>	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision: 4 Spatial encoding,	4 Spatial encoding, visual pattern recognition
Audition: 0 Nonc A	Audition: 0 None	
Kinesthefic: 1 1 Sumple stimulus	Kinesthetic: 1 Automatused, high	1 Automatised, highly learned perception
Memory: 2.5 Complex operation	Memory: 5 Recall	
Internal Influenced Variables Belief that the target has been located and positively identified using on board sensors	ooard sensors	
Input Interface: Comparison of target displayed with target plot on maps, imagery, anticipated target representation, unique identifying target features	entation, unique identifying target fi	aturcs

Description: The pilot communicates that he has acquired the target using secure voice on Have Quick II and/or via Link 16	6 Operator: Pilot	
		Completion Time: 10
	Priority: 4	Allowable Delay (K): 15 Difficulty (D)
	Interruptable: Yes	Sheddable: No
	Resumable: Yes	Shed If Late: Not Applicable
	Feeds Back to Higher Level Goal	Level Goal No
Auditory Category: 5 Voice Output		KNOWLEDGE
External Cue: No		Declarative:
Cognitive Category: 3 Verbal encoding, decoding, speech production, listening		Aircraft operating procedures, standard operating procedures, standard communications format.
Initiating Conditions: Target has been acquired		
Initiating Actions: Begin transmitting to the FAC using Have Quick II		Situational:
Ending Conditions: Communication with the FAC is complete FAC is confident the proper target has been acquired Ending Actions: Begin manoeuvering to weapons release parameters	been acquired	Tactical situation, quality/security of communications
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Voice: I Voice Output	Voice: 3 Speech production	
Psychomotor: 1 1 Sumple Psych	Psychomotor: 1 Automatised, highly learned	ly learned
Memory: 1 Commit to memory (LTM and STM)	Memory: 5 Memorization	
External Influenced Variables HOTAS, radio transmission on COMM 1/2		
Output Interface: COMM 1/2, HOTAS, Have Quick II		
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS	NL PROCESS
Vision: 0 None	Vision: 0 Nonc	
Audition: 5 Speech input (attended to, salient to the primary task)	Audition: 5 Verbal decoding, speech recognition	peech recognition
Kinesthetic: 1 1 Sumple stimulus	Kinesthetic: 1 Automatused, hugh	1 Automatised, highly learned perception
Memory: 2.1 Accessible, familiar	Memory: 1 Automatised	

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		Annex I - CF18 Air to Grou	und PC	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 73	7 3 2 2(e) Goal:	that the FAC receives a target and target area description from the pilot(s)		Goal ID: 7322(c)	Source Goal: 7322(e)
The pilot describes an overview of wh of cardinal heading pilot then gives a d the FAC confidenc normally confirm a	the target area and zre, from the pilot's s is used when desc etailed description c e the pilot has acqui few more details as	The pilot description normally begins with an overview of where, from the pilot's perspective, the tarot lies relative large geographic features nearby. The use of cardinal headings is used when describing objects location relative one another in order to avoid confusion. The pilot then gives a detailed description of the target's appearance, location, and any unique identifying traits that give the FAC confidence the pilot has acquired the correct target. The FAC and pilot, still using have Quick II, will normally confirm a few more details as a final confirmation that the proper target is about to be attacked		Operator: Pilot Priority: 3 Allo Interruptable: No Resumable: Not Applicable	Completion Time: 60 Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
			Ŧ	Feeds Back to Higher Level Goal	d Goal No
Auditory Category:		4 Speech Input (primary task)			KNOWLEDGE
External Cue:	I Cue: No				Declarative:
Cognitive Category: Initiating Conditions	gory: 5 Me litions: Target/tar	Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Target/target area is displayed on the DDI Target has been acquired	evel ops		Standard operating procedures, standard communications format, sensor displayed target information
Initiatino Ac	tions: Begin trans	Initiating Actions: Been transmitting to the FAC using Have Outck II			Situational:
Ending Cond Ending A	itions: Target/targ	Ending Conditions: Target/target area description is complete FAC is confident the pilot has acquired the proper target Ending Actions: Begin to manoeuver to weapons release parameters	d the proper ta	rget	Target specifies and description, target area layout, location of target relative other significant objects in target area, environmental conditions, tactical situation, quality/security of communications
OUTPU	OUTPUT/BEHAVIOUR		COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice:	 Voice Output 	1	Voice:	3 Speech production	
Psychomotor:	0 None	Psy	Psychomotor:	0 None	
Memory:	I Commit to n	I Commut to memory (LTM and STM)	Memory:	5 Memonzation	
External Influence Output Interface:	nced Variables e: COMM 1/2, H	External Influenced Variables COMM 1/2 controls and/or Link 16, imagery displayed on DDIs by on board sensors Output Interface: COMM 1/2, HOTAS, Have Quick II, DDIs, HSD, EGI, AMIRs	on board senso	SIG	
INPU	INPUT/SENSATION		COGNIT	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Vision:	1 2 Pattern, spa	1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	pattern recognition
Audition:	5 Speech inpu	Speech input (attended to, salient to the primary task)	Audition:	5 Verbal decoding, speech recognition	ı recognition
Kinesthetic:	1 1 Simple stimulus		Kinesthetic:	1 Automatised, highly learned perception	rned perception
Memory:	2 5 Complex operation	eration	Memory:	5 Recall	
Internal Influenced Variables		Belief that the target area and the target have been accurately describ	ed to the FAC	using Have Quick II, and that	been accurately described to the FAC using Have Quick II, and that the correct target is about to be attacked
Input Interface	; Target area/targe	Input Interface: Target area/target match target plot on maps, target description from FAC FAC is satisfied the correct target has been designated. All formation members agree that the correct t	fied the correct	t target has been designated A	Il formation members agree that the correct t

Annex I - CF18 Air to Grou	nd PCT	8 Air to Ground PCT Goal Analysis Results	
IP Number 7 3 2 2(h) Goal: that the target is visually acquired using NVGs	Goal ID:	ID: 7322(h) Source Goal: 7322(h)	
Description: Prior to arriving in the target area, the pilot ensures that the target coordinates are entered correctly into the aircraft database. He also confirms the accuracy of his EGI system, and performs an update to improve navigation accuracy, if necessary		Operator: Pilot Completion Time: 60 Priority: 2 Allowable Delay (K): 1 2 Difficulty (D)	(D)
The NVG equipped pilot will find his target in much the same way a pilot finds his target visually during the daytime. This will involve performing some form of dive manoeuvre in order to visually acquire the target using his NVGs at night. Prior to performing the dive attack, the pilot normally nav designates the target. He then offsets the target to either the left or right and then, at a pre-calculated distance/altitude/speed, he executes the dive manoeuvre target to either the left or right and then, at a pre-calculated distance/altitude/speed, he executes the dive manoeuvre target to either the left.		Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No	abic
Auditory Category: 0 None External Cue: Not Applicable		<u>KNOWLEDGE</u> Declarative:	E
5	el ops y donned and ac		ccognition, key features to
Initiating Actions: Begm visual search of target area Ending Conditions: Target is acquired using NVGs Ending Actions: Update target designation and communicate the target has been acquired to the FAC using Have Quick II.	.C using Have (Situational: Significant features in target area that help positively ID target, unique target features, target area environmental conditions and light Quek II.	slp positively ID target, onmental conditions and light
OUTPUT/BEHAVIOUR	OGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 1 Sumple Psych Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	 Automatised, highly learned Memorization 	
External Influenced Variables NVG settings, cockput lighting, exterior aircraft lighting Output Interface: NVGs, EGI			
INPUT/SENSATION Vision: 1.2 Pattern snattal relatioshin, tracking graphic displays	COGNITIV Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	
0 None	Audition:	0 Nonc	
Kinesthetic: ⁰ None Kin	Kinesthetic:	0 None	
Memory: 2.5 Complex operation Internal Influenced Variables Belief that the target has been located and positively identified using NVGs	Memory: IVGs	5 Recall	
00	}		

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	Annex I - CF18 Air to Ground	Air to Ground PCT Goal Analysis Results	vsis Results
IP Number 7331(0) Goal:	: that the area surrounding the target and the target are found visually	Goal ID: 7331(0)	Source Goal: 7221(o)
Description: Anticipate what the target surrounding visually or mentally. When reviewing over the target Look out and search for large features Find DMPI	Description: Anticipate what the target surrounding area look like by reviewing the target photos, Maps or data linked imagery visually or mentally. When reviewing the target, recognize how your run-in ground track will bring you into and over the target Look out and search for large features that help you to identify smaller features that lead your cycs to the Target Find DMPI	Operator: Pilot Priority: ³ Allo Interruptable: No Resumable: Not Applicable	Completion Time: 4 Allowable Delay (K): Difficulty (D) Sheddable: No ticable Shed If Late: Not Applicable
Anditory Category: 0 None		Feeds Back to Higher Level Goal	·Level Goal No KNOWLEDGE
	Not Applicable		Declarative:
Cognitive Category: 4 Spa	4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Specific range from the target, within line of sight, during pull up manoeuvre		Visual search pattern technique Pattern recognition, key features to find ground patterns visually
Initiating Actions: Conduct visual search pattern Ending Conditions: Target has been located Ending Actions: Monitor Target position for Id	itiating Actions: Conduct visual search pattern Jing Conditions: Target has been located Ending Actions: Monitor Target position for Identification		Situational: Specific Target surrounding features (e.g. terrain, large features surrounding Target, smaller umque target features, weather, etc.)
OUTPUT/BEHAVIOUR		COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None		Voice: 0 None	
-	1 Simple Psychomotor: 1 Commute memory (I TM and STM)		thy learned
Memory: Commune External Influenced Variables Output Interface: None		iMemory: o Memorization	
INPUT/SENSATION		COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Vision: 1 2 Pattern, sp	1 2 Pattern, spattal relatioship, tracking, graphic displays	Vision: 4 Spatial encoding	4 Spatial encoding, visual pattern recognition
Audition: 0 None	Aud	Audition: 0 None	
Kinesthetic: 0 None	Kinesthetic:	netic: 0 Nonc	
Memory: 2.3 Spatially coded	of that Taront has been located	Memory: 3 Spatial decoding	
Input Interface: Surrounding Ground and target features	ound and target features		

Annex I - CF18 Air to Ground PCT Goal Analysis Results	Id PCT Goal	Analysis Results
IP Number 7.3.3.2(b) Goal: that the target is designated and that the steering information is available and displayed	Goal ID: 73	7 3 3 2(b) Source Goal: 7 2 2 2(b)
First NAV designate the Target position (or Offset aim point) With the TDC assigned to the desired display First NAV designate the Target position is then adjusted by moving the TD diamond or the NAV stabilized cursor (Radar or the AMIRS), the designation is then adjusted by moving the TD diamond or the NAV stabilized cursor designation When satisfied that the designation is accurately on the Target (or Offset point) add O/S if required (Pre-programmed) by depressing the appropriate push button on the HSD Confirm that the Target Wypt, distance and heading are displayed in the HUD and that they are accurate		Operator: Pilot Completion Time: 25 Priority: 4 Allowable Delay (K): 1.6 Difficulty (D) Interruptable: Yes Sheddable: No Resumable: No Sheddable: No Feeds Back to Higher Level Goal No
Auditory Category: 0 None External Cue: Not Applicable		<u>KNOWLEDGE</u> Declarative:
De D		Aircraft operating procedures Tactics. Standard Operating procedures. Designation procedures Sensor displays and symbology interpretation
Initiating Actions: Nav designate the target Ending Conditions: Target designation symbology is on the desired location for target area identification Ending Actions: Keep target designation on the desired aim point		Situational: General target Area features Range and distance from target.
OUTPUT/BEHAVIOUR	GNITIVE/PERCI	COGNITIVE/PERCEPTUAL PROCESS
Voice: 0 None	Voice: 0 None	
Psychomotor: 1 Simple Psych Memory: 1 Commit to memory (LTM and STM) M	Psychomotor: 1 Automatised, Memory: 5 Memonzation	 Automatised, highly learned Memorization
External Influenced Variables Target designation symbology Output Interface: DDI,HUD		
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	OGNITIVE/PER	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition
Audition: ⁰ None A	Audition: 0 None	
Kinesthetic: ⁰ None Kine	Kinesthetic: 0 None	
Memory: 2.3 Spatially coded Internal Influenced Variables Belief that the target designation symbology discipaved is on the desired location	ż	3 Spatial decoding
5		

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Annex I - CF18 Air to Grou	8 Air to Ground PCT Goal Analysis Results	ysis Results
IP Number 7 3 3 2(c) Goal: that the target area is identified with Aircraft Sensors	Goal ID: 732(c)	Source Goal: 7 2 2 2(c)
Description: Anticipate what the target surrounding area look like by reviewing the target photos, Maps or data linked imagery visually or mentally. When reviewing the target, recognize how your run-in ground track will bring you into and over the target Visually look at the displayed target Area picture and search for large features that help you to identify smaller features Identify target Area	gery Operator: Pilot and Priority: 4 Interruptable: Yes Resumable: No	Completion Time: 10 Allowable Delay (K): 1 5 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None	Feeds Back to Higher Level Goal	r Level Goal № <u>KNOWLEDGE</u>
External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Target has been designated, at the calculated range where magnification provides enough details for area ID	ttons) s enough details for area ID	Declarative: Aurcraft operating procedures Tactics Standard Operating procedures Sensor displays and symbology interpretation
Initiating Actions: Look at target area on DDI Ending Conditions: Target Area has been identified Ending Actions: Monitor displayed target Area for target Identification		Situational: Specific target area features (e.g. terrain, large features surrounding target, weather, etc)
OUTPUT/BEHAVIOUR Voice: 0 Nonc	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	AL PROCESS
0 None 1 Commit to memory (LTM and STM)		
External Influenced Variables None Output Interface: DDI		
INPUT/SENSATION Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
. 0 None	Audition: 0 None	
None Spatially coded	Kunestnetic: U Nonc Memory: 3 Spatial decoding	20
Internal Influenced Variables Belief that the Area displayed on the DDI corresponds to the desired target surroundings Input Interface: DDI	rrget surroundings	

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		Annex I - CF18 Air to Gr	ound PCT	Air to Ground PCT Goal Analysis Results	c esults
IP Number 7 3 2(d)	2(d) Goal:	that the aircraft is in the desired position to release weapons	G	Goal ID: 7332(d)	Source Goal: 7221(d)
Description: Conduct attack type desired to get to opti Attack, Curvi Pop Attack, and Loft/Toss The pull up is generally done by applying Adjust Power to achieve and mantan the Dive angle by placing the Lift vector on t Anticipate Velocity vector approaching th	destred to get to opti ttack, and Loft/Toss Ily done by applying eve and maintain the g the Lift vector on t rector approaching th	Description: Conduct attack type desired to get to optimal delivery parameters Level Attack, Curvilinear Attack, Pop Up Attack, Curvi Pop Attack, and Loft/Toss The pull up is generally done by applying 3 G, smoothly and rapidly raising the nose to the desired climb angle Adjust Power to achieve and maintain the desired LAS/TAS Anticipate the turn-in point and roll-in to the desired Dive angle by placing the Lift vector on the AOD (AIM Off Distance) Three G is normally used through the turn Anticipate Velocity vector approaching the AOD, and conduct an unloaded roll to winss level at the desired dive	р. Ша	Operator: Pilot Priority: 3 Allow Interruptable: No Resumable: Not Applicable	Completion Time: 30 Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
angle Adjust Power to achicvc an Auditory Category:	eve and maintain the	angle Adjust Power to achicve and maintain the desired IAS/TAS Adjust dive angle to the desired delivery angle and Auditory Category: 0 None		Feeds Back to Higher Level Goal	Goal No <u>KNOWLEDGE</u>
External Cue: Cognitive Category: Initiating Conditions:	Cue: Not Applicable ory: 5 Memorizatio ions: Designated distanc	External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Designated distance/tume from the target	h level ops		Declarative: Aurcraft opcrating procedures Tactics Standard Opcrating procedures Applicable orders, regulations and plans
Initiating Acti Ending Conditi Ending Acti	ons: Manocuver a: ions: Aırcraft has a ions: Maıntaın stab	Initiating Actions: Manocuver arrcraft towards a weapons release solution Ending Conditions: Aircraft has achieved Weapons Delivery Parameters Ending Actions: Maintain stable platform for weapons release			Situational: Mission requirements and objectives Specifics of the tactical situation (c g threat/friendly forces, weather, terrain, etc) Details of on-going or planned activities
OUTPUT	OUTPUT/BEHAVIOUR		COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice:	0 None		Voice:	0 None	
Psychomotor: Memory:	 Difficult but familiar Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spatial encoding 5 Memorization	
External Influenced Variables Output Interface: Auroraft contro		Aırcraft position, altıtude, attıtude, heading, speed and g s and throttles, HUD			
<u>INPUT/</u> Vision:	INPUT/SENSATION sion: ^{2 Penpheral}		COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automatised, highly learned perception	<u>COCESS</u> ed perception
Audition:	0 None		Audition:	0 None	
Kinesthetic: Memory:	 1 Simple stimulus 2 S Complex operation 	ls tron	Kinesthetic: Memory:	 Automatised, highly learned perception Recall 	ed perception
Internal Influenced Variables Input Interface: HUD, Relative p		Internal Influenced Variables Belief that the aircraft displayed parameters have achieved desired Weapons release parameters Input Interface: HUD, Relative position to surrounding ground/terrain	Weapons release p	arameters	

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Annex I - CF18 Air to Groun	nd PCT	8 Air to Ground PCT Goal Analysis Results	desults
IP Number 7 3 3 2(e) Goal: that the target is identified	Goa	Goal ID: 7332(e)	Source Goal: 7222(c)
Description: Anticipate what the target looks like by reviewing the target photos, Maps or data linked imagery visually or mentally When reviewing the target, recognize what the target image should look like on the displays. Adjust Sensors information displayed to optimize target resolution and recognition features Visually look at the target picture displayed on the Sensors tactical displays and search for large features that help you to identify smaller features Identify target		Operator: Pilot Priority: 4 Allowable Interruptable: Yes Resumable: No	Completion Time: 10 Allowable Delay (K): 1 3 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Amilicable			610
External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Target area has been identified on the Sensor display, at the calculated range where magnification provides enough details for target ID	el ops e magnificatio	n provides enough dctails	Dectarative: Aircraft operating procedures Tactics Standard Operating procedures Anticipation of target representation on display for conditions of the day Interpretation of Map/Imagery/Onboard Sensors and symbology/LINK 16
Initiating Actions: Look at the target image on the DDI Ending Conditions: Target is positively Identified Ending Actions: Monitor target features to further confirm ID			Situational: Specific target features (e g terram, large features surrounding target, smaller unique target features, weather, etc.) Target IR picture Surrounding IR picture Target Radar Picture Surrounding Radar picture
OUTPUT/BEHAVIOUR Voice: 0 None	OGNITIVI Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	DCESS
Psychomotor: 1 1 Simple Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	 Automattsed, highly learned Memorization 	Icd
External Influenced Variables Nonc Output Interface: DDI, Maps, Photos			
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	ROCESS attern recognition
Audition: 0 None <u>Kinaethatia</u> 0 None <u>Kin</u>	Audition: Kinesthetic:	0 None 0 None	
 2.3 Spatially coded enced Variables Belief that the target displayed corresponds to the assigned target for at 	Memory: tack	3 Spattal decoding	
Input Interface: DDI, Maps Photos			

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		Annex I - CF18 Air to Groun	nd PCT	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7332(f)	2(f) Goal:	that the weapons solution is validated for weapons release	Goal	Goal ID: 732(f)	Source Goal: 722 l(g)
Description: Confirm visually on proper weapon is sel the HUD that the Ma displayed and is valiv Impact)	the HUD that all re ected and that the T ister ARM is in the d for release Confir	Description: Confirm visually on the HUD that all required delivery parameters have been attained for release Ensure that the proper weapon is selected and that the TDC is assigned to the appropriate display for delivery. Confirm visually on the HUD that the Master ARM is in the ARM position Visually confirm that the desired release symbology is displayed and is valid for release. Confirm that the displayed aim point is on the DMPI (Desired Mean Point of Impact)	y on	Operator: Pilot Priority: 2 Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 2 Allowable Delay (K): 1 2 Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
Auditory Category: External Cue: Cognitive Category: Initiating Conditions:	 gory: 0 None gory: 0 Not Applicable ory: 5 Memorizatio tions: Aircraft has achiev 	Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Ancraft has achieved weapons release parameters and point of release is approaching	S.	D	craf ceda
Initiating Act Ending Condit Ending Act	itiating Actions: Visually confirm weapon s ling Conditions: Weapons solution has beer Ending Actions: Monitor weapons solution	Initiating Actions: Visually confirm weapon solution Ending Conditions: Weapons solution has been validated Ending Actions: Monitor weapons solution			Situational: Mission requirements and objectives Specifics of the tactical situation (e g threat/friendly forces, weather, terrain, etc.) Type of weapons delivered
OUTPUT Voice:	OUTPUT/BEHAVIOUR Voice: 0 None		DGNITIVE Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 Nonc	OCESS
Psychomotor: Memory:	0 None I Commit to me	0 None Psycho 1 Commut to memory (LTM and STM) M	Psychomotor: Memory:	0 None 5 Memorization	
External Influenced Variables Weapons rele Output Interface: HUD and Master Arm switch	ced Variables : HUD and Maste	Weapons release symbology er Arm switch			
INPUT Vision:	INPUT/SENSATION sion: 11 Text, Dial Reading	cading	COGNITIV Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal encoding	ROCESS
Audition: Kinesthetic:	0 None 0 None	A	Audition: Kinesthetic:	0 None 0 None	
Memory: 2.4 Semantics Internal Influenced Variables Input Interface: HUD	Ξ.	hat the weapons solution displayed is valid for weapons release	Memory:	3 Verbal decoding	

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Annex I - CF18 Air to G	ound PCT G	8 Air to Ground PCT Goal Analysis Results	llts
IP Number 7 3 3 2(g) Goal: that the PGM weapons are delivered	Goal ID:	7 3 3 2(g)	Source Goal: 7222(g)
Description: Depress and hold the weapons release button (Pickle button) on the stick Confirm that the PGM weapons are being released. Once all weapons have been released, release Pickle button Confirm weapons release on the SMS page on the DDI		Operator: Pilot Com Priority: 2 Allowable Delay (K): Interruptable: No Resumable: Not Applicable Shec Feeds Back to Higher Level Goal No	Completion Time: 5 Delay (K): 1 2 Difficulty (D) Sheddable: No Shed If Late: Not Applicable No
Auditory Category: 0 Nonc External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Wcapons solution validated and at the release altitude and or range		Dec	KNOWLEDGE Declarative: Artcraft operating procedures Tactics Standard Operating procedures Weapons operating procedures
Initiating Actions: Monitor displayed release symbology Ending Conditions: Weapons have been released Ending Actions: Stop attending to goal		Situ Type terra	Situational: Type of weapon released, weather conditions, visibility, winds, sun, terrain, target type
OUTPUT/BEHAVIOUR Vaire: 0 None	COGNITIVE/PH Voice: 0 1	COGNITIVE/PERCEPTUAL PROCESS	SI
1		 Automatised, highly learned Memorization 	
External Influenced Variables Weapon release from ancraft , Pickle button depression, Weapor Output Interface: HUD, DDI, HOTAS, Pickle button	depression, Weapons release symbology		
INPUT/SENSATION Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	COGNITIVE/I Vision: 4 9	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	ESS ecognition
Audition: 1 Tone or simple auditory signal Audition: Kinesthetic: 1 I Simple stimulus Kinesthetic: Kinesthetic: 24 Semantically coded Memory: Data Influenced Variables Belief that the weapons have been delivered and that the symbology displays that fact		 Automatiscd, highly learned perception Automatiscd, highly learned perception Verbal decoding 	cption
Input Interface: HUD, DDI, Aircraft movement at weapons release,			

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Annex I - CF18 Air to Grou	und PCT	8 Air to Ground PCT Goal Analysis Results	
IP Number 7 3 3 2(h) Goal: that the self-lasing LGB delivery is conducted safely and effectively		Goal ID: 7 3 3 2(h) Source Goal: 7 2 2 2(h)	
Description: Once PGM weapon is released, ensure that the Laser is armed and ready to fire For auto delivery, confirm that the laser is being fired at the target at the appropriate times. Monitor LGB impact For continuous lasing delivery, enable the trigger option by depressing the appropriate pushbutton on the AMIRS display Fire the laser manually after bomb release by depressing the trigger on the control stick. Monitor LGB impact Once weapon has impacted the target, release the trigger.	υ	Operator: Pilot Completion Time: Priority: 2 Allowable Delay (K): 1 Difficulty (D) Interruptable: No Sheddable: No Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No	
Auditory Category: 0 None External Cue: Not Applicable		<u>KNOWLEDGE</u> Declarative:	
Ň	svel ops	Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, target/target area information, weaponeering information	cdurcs, rea
Initiating Actions: Weapons are released Ending Conditions: Weapons delivery is completed.		Situational: weather conditions, visibility, winds, sun, terrain, target type	it type
to task			
Voice: 0 None	COGNITIV Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	
Psychomotor: 1.3 Complex and or unfamiliar Psychomotor	Psychomotor:	5 Memorization/recall, calculation, estimation, deduction, reasoning	
Memory: I Commit to memory (LTM and STM) External Influenced Variables AMIRS designation I ager code Weapons release narameters Attack axis	Memory:	5 Memorization	
~			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision: Audition:	4 Spatial encoding, visual pattern recognition 0 None	
1 1 Simple stimulus	Kinesthetic:	Automatised, highly learned perception	
=	Memory:	3 Verbal decoding	
Internal Influenced Variables Belief that the self-lasting LUB delivery has been effectively conducted Input Interface: AMIRS display, visual/NVG cues	σ		

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Annex I - CF18 Air to G	round PC	Air to Ground PCT Goal Analysis Results	s Results
IP Number 7 3 2(1) Goal: that the target designation symbology is on the desired target aim point		Goal ID: 732()	Source Goal: 7222()
Description: Adjust and update target designation on the desired aim point by moving the TDC If required, turn the aircraft to the right to ensure constant field of view to the target			Completion Time: ⁴⁰ Allowable Delay (K): Difficulty (D)
	I X	Interruptable: No Resumable: Not Applicable	Sheddable: No le Shed If Late: Not Applicable
	Ŧ	Feeds Back to Higher Level Goal	No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	directions)		Alrecaft operating procedures Tactics Standard Operating
Initiating Conditions: Target designation has move off the desired Aim point, or LGB has been released and is guiding to target	leased and is guidir	g to target	procedures Designation procedures sensor displays and symbology interpretation
Initiating Actions: Depress and move the TDC			Situational:
Ending Conditions: Designation has been kept on the desired aim point and/or weapons impact			Specific target area features (e g terraın, large features surrounding
Ending Actions: Monitor target designation			target, weather, etc.), type of attack, type of weapon delivered
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar	Psychomotor:	4 Spatial encoding	
Memory: 1 Commut to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Target designation symbology			
Output Interface: HUD, DDI			
INPUT/SENSATION	COGNIT	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	al pattern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: 1 1 Sumple stumulus	Kinesthetic:	1 Automatised, highly learned perception	arried perception
Memory: 2.4 Semantically coded	Memory:	3 Verbal decoding	
Internal Influenced Variables Belief that the designation is on the desired target aim point			
Input Interface: DDI			

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te recovery altrude or when pull-up cue / breakwary X is displayed in the HUD, the pilot must alt-op manoeuver within 1/3 second and hild darred claims or a chereved and maintain desired claims in the original and the one or fadar altrude during ecovery to ensure minimum district a charance criteria. Adjust throttes to achieved and maintain desired claims in the pilot must district during ecovery to ensure minimum district a charance criteria. Adjust throttes to achieved and maintain desired claims in the pilot must district during ecovery to ensure minimum district also in the charance criteria. Adjust throttes to achieved and or ensure minimum altitude is not breaken. Increase the charance criteria Adjust throttes to achieved and or ensure minimum altitude is not breaken increase. I wor Applicable is completed and/or arcard a minimum recovery altitude, whichever comes first are as the although from the ground in the desired cimbing attrude and/or arcard and minimum recovery altitude. Whichever comes first are as the although from the ground in the desired cimbing attrude and/or arcard and/or ancard and/or antide and/or ancard and/or ancard and/or antide and/or ancard and/or antide and/or ancard and/or ancard and/or antide and/or antide and/or ancard and/or antide and/or and/or antide and/or and/or antide and/or and/or ancard and/or ancard and/or ancard and/or ancard and/or antide and/or anti	
 Allowal /ul>	Allowable Delay (K): Sheddahle: N
10 onect the clearance critera Agiust throatist to achtered and maintain desired recovery 10 onect the clearance critera Agiust throatist to achtered in an intram desired recovery in threater 11 certification Resumable: 12 certification None mal Cue: Not Applicable regory: 5 12 of the comport of the completed and/or arcraft at minimum recovery altitude, whichever comes first Actions: Stop actending to goal diftions: Actions: Stop attending to goal Voice: UT/BEHAVIOUR Voice: 0 Nom: Voice: 12 Difficult but familiar Psychomotor: 12 Difficult but familiar Nemory signals. 12 Difficult but familiar Nemory: 12 Difficult but familiar Psychomotor: 12 Difficult but familiar Voice: 12 Difficult but familiar Psychomotor: 12 Difficult but familiar Psychomotor: 13 Difficult but familiar Psychomotor: 14 Commit to memory fully Psychomotor: 15 Specter prival Specter prival 16 Commit to memory signals Specter prival	Sheddahle: N
Itegory: 0 None Resumable: Not Applicable Inel: Not Applicable Feeds Back to Higher Level G Inel: Not Applicable Reconstruction/recall, calculation, estimation, deduction, reasoning, high level ops: Inel: Not Applicable Remorization/recall, calculation, estimation, deduction, reasoning, high level ops: Infinitions: Weapons release is completed and/or aureraft at minimum recovery altitude, whichever comes first Actions: Sofe escape dive recovery intracted by pull up manneeuvre Infitions: Arcraft is at a safe altitude from the ground in the desired climbing attrude Actions: Sofe escape dive recovery intracted by pull up manneeuvre Infitions: Arcraft is at a safe altitude from the ground in the desired climbing attrude Actions: Sofe astage diverse comes first Actions: Sofe astage Infitions: Arcraft point Infitions: Arcraft point Infitions: Arcraft and STM) Infitions: Arcraft point Infitions:	
Resumable: Not Applicable itegory: 0 None mal Cue: Not Applicable mal Cue: Not Applicable mal Cue: Not Applicable ftegory: 5 Memorzator/recall, calculaton, estimation, deducton, reasoning, ligh level ops diftions: Wenpoins et as set a state at a set at and the manoeuve diftions: Arcandi is at a set a state at a set at and the devine at the devine at the devine at a set at a	
Feeds Back to Higher Level G itegory: 0 None all Cue: Not Applicable all Cue: Not Applicable all Cue: Not Applicable tegory: 5 Memorzator/recall, calculaton, estimation, deduction, reasoning, high level ops ditions: Safe scape dive recovery initiated by pull up manoeuvre ditions: Safe scape dive recovery initiated by pull up manoeuvre ditions: Sno attending to goal UT/IBEHAVIOUR COGNITIVE/PERCEPTUAL PRO 0 None Voice: 0 None 12 Difficult but familiar Psychomotor: 4 Spatial encoding 12 Difficult but familiar Psychomotor: 5 Memorization eccel Arriables Ancraft position, aftende, heading, speed and g 5 Speech input (attended to, saltent to the primary task) 0 CONTITIVE/PERCEPTUAL PRO Voine: 4 Spatial encoding, speech recovery signals	pplicable Shed If Late: Not Applicable
Itegory: 0 None nal Cue: Not Applicable nal Cue: Not Applicable nal Cue: Not Applicable tegory: 5 Memorrzaton/recall, calculation, estimation, deduction, reasoning, high level ops diftions: Neapons release is completed and/or arcraft at minimum recovery alitude, whichever comes first Actions: Safe secape dive recovery initiated by pull up manecuver diftions: Arcraft is at a safe altitude from the ground in the desired climbing attride Actions: Stop attending to goal UT/IBEHAVIOUR O 0 None Voice: 0 None 12 Difficult but familiar Psychomotor:: 4 Spatial encoding 12 Difficult but familiar Psychomotor:: 5 Memorrzation eaced Variables Aurraft position, signals 5 Memorration actions: Stop atternding to goal 5 Speech input (attended to, salient to the primary task) 5 Vorbal decoding, speed in the cooling, speed in the cooli	
mal Cue: Not Applicable itegory: 5 Memorzation/recall, calculation, estimation, deduction, reasoning, high level ops diffions: Weapons release is completed and/or arcent at minimum recovery altitude, whichever comes first Actions: Safe escape dive recovery initiated by pull up manoeuve diffions: Ancraft is at a safe altitude from the ground in the desired climbing attrude Actions: Stop attending to goal UT/BEHAVIOUR COGNITIVE/PERCEPTUAL PRO O None Voice: 0 None 12 <difficult but="" familiar<="" th=""> Psychomotor: 4 Spatial encoding I.Commut to memory (LTM and STM) Memory: 5 Memory: 5 Memorzation ace: Arrenth postion, altitude, heading, speed and g 4 Spatial encoding 4 Spatial encoding ace: Arrenth postion, altitude, attitude, heading, speed and g 5 Memory: 5 Memory (LTM BR 12<patient:< th=""> patient: Psychomotor: 4 Spatial encoding ace: Arrenth postion, altitude, attitude, heading, speed and g 5 Memory (LTM BR ace: Arrenth postion, altitude, attitude, heading, speed and g 5 Vortial encoding, visual patiention ace: Arrenth postion, graphic displays Yision: 4 Sp</patient:<></difficult>	KNOWLEDGE
(tegory: 5 Memorzation/recall, calculation, estimation, deduction, reasoning, high level ops difficions: Weapons release is completed and/or aurcraft at minimum recovery altitude, whichever comes first Actions: Safe scape dive recovery initiated by pull up manoeuvre difficions: Aircraft is at a safe altitude from the ground in the desired climbing attitude Actions: Stop attending to goal COCINTITYLE/PERCEPTUAL PRO UT/BEHAVIOUR Voice: 0 None 0 None Voice: 0 None 12 Difficult but familiar Psychomotor: 4 Spatial encoding 12 Difficult but familiar Memory: 5 Memorization ace: Ancraft position, altitude, heading, speed and g Actions: Sport ace: Ancraft controls and throttles HUD. Safe sceape auditory signals Vision: 4 Spatial encoding 12 Pattern, spatial relationship, tracking, graphic displays COCINTITYE/PERCEPTUAL PRO 12 Pattern, spatial relationship, tracking, graphic displays Sverial decoding, visual patter, controls and traded to, salient to the primary task) 12 Pattern, spatial relationship, tracking, graphic displays S Verial decoding, visual patter controls, visual pattern, spatial relationship, tracking, graphic displays 13 Specel input (attended to, salient to the primary task) S Verial decoding, visual pattern, controls, visual pattern, visual patt	Declarative:
Inditions: Weapons release is completed and/or aurcraft at munuum recovery altitude, whichever comes first Actions: Safe escape dive recovery initiated by pull up manoeuvre Iditions: Aircraft is at a safe altitude from the ground in the desired climbing attitude Actions: Stop attending to goal IUT/BEHAVIOUR COGNITIVE/PERCEPTUAL PRO II Dinne II Dinne II Difficult but familiar II Difficult but familiar II Difficult but familiar II Dinne II Difficult but familiar II Dinne II Dinne II Dinne II Commut to memory (LTM and STM) Memory: S Memory: II Commut to memory (LTM and STM) Memory: S Memory: II Commut to memory (LTM and STM) Memory: S Memory: II Commut to memory (LTM and STM) Memory: S Memory: II Commut to memory (LTM and STM) Memory: S Memory: S Speech input (attended to, salient t	Aircraft operating procedures Tactics Standard Operating procedures Recovery/mill in symbology
Actions: Safe escape dive recovery initiated by pull up manoeuvre Iditions: Arteraft is at a safe altrude from the ground in the desired climbing attrude Actions: Stop attending to goal UT/BEHAVIOUR OGONITIVE/PERCEPTUAL PROC UT/BEHAVIOUR Voite: 0 None 0 None Voite: 0 None 12 Difficult but familiar Psychomotor: 4 Spatial encoding 12 Difficult but familiar Memory: 5 Memory: 5 Memoryation 0 None Voite: 0 None Voite: 0 None 12 Difficult but familiar Psychomotor: 4 Spatial encoding 12 Difficult but familiar Memory: 5 Memory: 5 Memory: 5 Memory: ace: Aircaft position, altitude, heading, speed and g Memory: 5 Vortial decoding, visual pat ace: Aircaft costing, graphic displays Memory: 5 Vortial decoding, visual pat 12 Pattern, spatial relatioship, tracking, graphic displays Memory: 5 Vortial decoding, visual pat 12 Pattern, spatial relatioship, tracking, graphic displays Memory: 5 Vortial decoding, visual pat 13 Pattern, spatial relatioship, tracking, graphic displays Memory: <	
diffions: Arcraft is at a safe altructe from the ground in the desired climbing attructe Actions: Stop attending to goal UT/BEHAVIOUR COGNITIVE/PERCEPTUAL PRO- 0 None Voice: 0 None 12 Difficult but familiar Psychomotor: 4 Spatial encoding 12 Difficult but familiar Memory: 5 Memoryation ace: Arcraft position, altitude, heading, speed and g ace: Arreaft controls and throttles HUD, Safe escape auditory signals COGNITIVE/PERCEPTUAL PRO- UT/SENSATION Vision: 5 Speech input (attended to, salient to the primary task) 12 Pattern, spatial relatioship, tracking, graphic displays Vision: 5 Verbal decoding, visual pate 12 Pattern, spatial relatioship, tracking, graphic displays Vision: 5 Verbal decoding, visual pate 13 Speech input (attended to, salient to the primary task) Vision: 5 Verbal decoding, visual pate	Situational:
Actions: Aircraft is at a sare attrade from the ground in the desired climbing attrade Actions: Stop attending to goal UT/BEHAVIOUR COGNITIVE/PERCEPTUAL PROO 0 None Voice: 0 None 1 2 Difficult but familiar Psychomotor: 4 Spatial encoding 1 Commut to memory (LTM and STM) Memory: 5 Memorization enced Variables Aircraft position, altitude, heading, speed and g ace: Aircraft controls and throttles HUD, Safe escape auditory signals UT/SENSATION COGNITIVE/PERCEPTUAL PRO 1 2 Pattern, spatial relatioship, tracking, graphic displays Vision: 4 Spatial encoding, visual pat 0 Speech input (attended to, salient to the primary task) Vision: 5 Verbal decoding, visual pat	Minimum recovery altitude, terrain, slone, weather, visibility
UT/BEHAVIOUR COGNITIVE 0 None 0 None Voice: 1 2 Difficult but familiar Psychomotor: 1 2 Difficult but familiar Psychomotor: 1 Commut to memory (LTM and STM) Psychomotor: 1 Commut to memory (LTM and STM) Memory: acc: Aircraft position, altitude, heading, speed and g acc: Aircraft position, altitude, caterating, speed and g acc: Aircraft controls and throttles HUD, Safe escape auditory signals acc: Aircraft controls and throttles HUD, Safe escape auditory signals 0 TYSENSATION COGNITIVE 1 2 Pattern, spatial relatioship, tracking, graphic displays COGNITIVE 5 Speech input (attended to, salient to the primary task) Audition:	
0 Nonc Voice: 12 Drifficult but famılıar Psychomotor: 1 Commit to memory (LTM and STM) Psychomotor: 1 Commit to memory (LTM and STM) Memory: acce: Aircraft position, altitude, heading, speed and g acce: Aircraft controls and throttles HUD, Safe escape auditory signals UT/SENSATION COGNTIV 1 2 Pattern, spatial relatioship, tracking, graphic displays Vision: 5 Speech input (attended to, salient to the primary task) Audition:	AL PROCESS
12 Difficult but familiar Psychomotor: 1 Commit to memory (LTM and STM) Psychomotor: 1 Commit to memory (LTM and STM) Memory: acc: Aircraft position, alititude, heading, speed and g acc: Aircraft controls and throttles HUD, Safe escape auditory signals UT/SENSATION COGNITIV 12 Pattern, spatial relatioship, tracking, graphic displays Vision: 5 Speech input (attended to, salient to the primary task) Audition:	
1 Commut to memory (LTM and STM) Memory: d Variables Aircraft position, altitude, heading, speed and g Aircraft controls and throttles HUD, Safe escape auditory signals COGNITIV EINSATION COGNITIV 2 Pattern, spatial relatioship, tracking, graphic displays Vision: 5 Speech input (attended to, salient to the primary task) Audition:	ជាខ
d Variables Aircraft position, altitude, heading, speed and g Aircraft controls and throttles HUD, Safe escape auditory signals COGNITIV EINSATION COGNITIV 2 Pattern, spatial relatioship, tracking, graphic displays Vision: 5 Speech input (attended to, salient to the primary task) Audition:	
Aircraft controls and throttles HUD, Safe escape auditory signals EINSATION 2 Pattern, spatial relatoship, tracking, graphic displays 5 Speech input (attended to, salient to the primary task) 4 Construction	
UT/SENSATION : 1.2 Pattern, spatial relatioship, tracking, graphic displays COGNITIV : 5 Speech input (attended to, salient to the primary task) Audition:	
 1.2 Pattern, spattal relatioship, tracking, graphic displays 5 Speech input (attended to, salient to the primary task) Audition: 	UAL PROCESS
: 5 Speech input (attended to, salient to the primary task) Audition:	ng, visual pattern recognition
1.1. Cranic channels	1g, speech recognition
Kinesthetic: 1.1 Surpressminus Kinesthetic: 1.1 Surpressminus	1 Automatised, highly learned perception
Memory: 2.4 Semantically coded Memory: 3 Verbal decoding	<u>ವ</u> ಿ

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Annex I - CF18 Air to C	round PCT	8 Air to Ground PCT Goal Analysis Results	sis Results
IP Number 7 3 3 2(1) Goal: that BDA is conducted	Go	Goal ID: 7332(1)	Source Goal: 7221(k)
Description: After ensuring that Aircraft is safely recovered from delivery, if desired the target BDA can be conducted by assessing Bomb impact point and damage resulting from hit Visually assess the AMIRS display		Operator: Pilot Priority: 8 Interruptable: Yes Resumable: No	Ď
	Fe	Feeds Back to Higher Level Goal	No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	g directions)		<u>KNOWLEDGE</u> Declarative: Assessment of target battle damage on IR display Weapons effects
Initiating Conditions: Aurcraft is safely recovered from attack and weapon has impacted the target	¥		
Initiating Actions: Look at DDI Ending Conditions: Target BDA is complete Ending Actions: Memonze target BDA			Situational: Target type and size, Weapons type, Weapons impact angle, weather, distance, AMIRS magnification
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 0 None	Psychomotor:	0 None	
Memory: I Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Nonc Output Interface: DDI, AMIRS display			
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	COGNITI Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recogn	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: ⁰ None	Kinesthetic:	0 None	
8	Memory:	3 Spatial decoding	
Internal Influenced Variables Benet that the target battle damage has been assessed Input Interface: DDI, AMIRS display			

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Annex I - CF18 Air to Ground PCT Goal Analysis Results	und PCT	Goal Analysis Re	sults
IP Number 7.3.4 1(b) Goal: that the pilot confirms the position of the formation by visually referencing his Link 16 display on the HSD	Goal ID:	ID: 7341(b)	Source Goal: 7113(d)
Description: Adjust and/or confirm LINK 16/MIDS Tactical Display parameters to ensure the desired airspace is covered Reduce range scale to ensure clarry of displayed information Observe picture being built on the LINK 16/MIDS Tactical Display Visually confirm position of Formation members by analyzing displayed information Mentally build formation position and situational awareness		Operator: Pilot Priority: 4 Allowab Interruptable: Yes Resumable: Yes	Completion Time: Allowable Delay (K): 1 75 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 Nonc External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Tactecal phase of mission begins	F.ee	Feeds Back to Higher Level Goal Dee Aur	cla suff
Initiating Actions: Visually reference Link 16 tactical display on HSD Ending Conditions: Tactical phase of mission ends Ending Actions: Stop visually referencing Link 16 tactical display on HSD			Situational: Tactical sutuation, phase of mission, mission objectives/requirements, correlation of displayed information with information displayed from other sources
OUTPUT/BEHAVIOUR COGNIT Voice: 0 None Voice Voice: 0 None Voice Psychomotor: 11 Smple Psychomotor Memory: 1 Commut to memory (LTM and STM) Psychomotor Memory: 1 Commut to memory (LTM and STM) Memory Memory: 1 Commut to memory (LTM and STM) Memory Memory: 1 Commut to memory (LTM and STM) Memory Memory: 1 Commut to memory (LTM and STM) Memory Memory: 1 Commut to memory (LTM and STM) Memory Memory: 1 Commut to memory (LTM and STM) Memory Output Interface: HOTAS HSD Link-16 Vision INPUT/SENSATION Vision Vision Vision: 12 Pattern, spatial relatioship, tracking, graphic displays Vision Audition: 0 None Audition Vision Minory: 23 Spatially coded Memory: Memory: Memory: 23 Spatially coded Memory Memory Memory: 23 Spatially coded Memory Memory Memory: 10 None Memory Memor	COGNITIVI Voice: Psychomotor: Memory: Vision: Vision: Audition: Kinesthetic: Memory:	COGONITIVE/PERCEPTUAL PROCESS Voice: 0 None vchomotor: 1 Automatsed, highly learned Memory: 5 Memorization Memory: 5 Memorization Vision: 4 Spatial encoding, visual pattern recognition Vision: 0 None Audition: 0 None Kinesthetic: 0 None Memory: 3 Spatial decoding	ESS DCESS ern recognition

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Annex I - CF18 Air to Gro	und PCT	8 Air to Ground PCT Goal Analysis Results	
IP Number 7 3 4 1(c) Goal: that the post-attack formation join-up is completed safely and cxpeditiously Description:	Goa	Goal ID: 7341(c) Source Goal:	Goal: 7113(c)
Formation Join-up is performed by using a combination of a visual overtake and cut-off angle		Operator: Pilot Co	Completion Time:
The cut-off angle is maintained by varying bank angle as the aircraft is moving up the reference line. The geometry of the retion is such that an increase in speed will remine a decrease in bank to maintain the cut-off and a and use	A.	Priority: ³ Allowable Delay (K): ¹⁵): 15 Difficulty (D)
versa Radar lock-on may be used to assist The Vc is monitored on the HUD and represent your true closure (both	÷	Interruptable: No Sh	Sheddable: No
ionguiudination and lateral. Establish a crosscheck between speed, bank angle and the reference line The closure is then reduced as the desired		Resumable: Not Applicable Sh	Shed If Late: Not Applicable
formation position is attained. To rejoin in close formation, the aircraft is moved to one side about 2-3 aircraft widths and about 50 feet low 50 to		Feeds Back to Higher Level Goal No	
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable		Declarative:	E .
Cognitive Category: 5 Memonization/recall, calculation, estimation, deduction, reasoning, high level ops	level ops	Standard operati	Standard operating procedures, aircraft controls and throttles, mission handling
Initiating Conditions: Individual attacks have been completed Formation join-up is required			ω
Initiating Actions: Formatton members begin to manoeuver IAW the pre-planned join-up procedure	a	Situational:	
Ending Conditions: Destred tactical formation is established		Environmental	Environmental conditions, relative formation following attack phase,
Ending Actions: Desired tactical formation is maintained		surface-to-air ai constaints	surface-to-air and air-to-air threats in near proximity, timing/routing constaints
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 3 Complex and or unfamiliar	Psychomotor:	5 Memorization/recall, calculation, estimation, deduction, reasoning	m, deduction, reasoning
Memory: I Commut to memory (LTM and STM)	Memory:	5 Mcmorization	
External Influenced Variables Ancraft position, altitude, attitude, heading, speed and g Radar/AMIRS parameters	IIRS parameters		
Output Interface: Aircraft controls and throttles HUD Sensor displays			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	
Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	
Audition: 0 None	Audition:	0 None	
Kinesthetic: 1 2 Complex stimulus	Kinesthetic:	4 Spatial encoding	
Memory: 2.4 Semantically coded	Memory:	3 Verbal decoding	
Internal Influenced Variables Belief that the formation join-up has been conducted			
Input Interface: Visual cues Sensor information (AMIRS/Radar) Link 16			

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	Annex I - CF18 Air to Ground PCT Goal Analysis Results	d PCT Goal	Analysis Res	llts
IP Number 7341(e) Goal:	1: that visual contact with other formation members is established using NVGs	Goal ID:	7 3 4 1(c)	Source Goal: 7112(h)
Description: From SA built with Aircraft sensors a clements Start a visual search pattert with NVG	Description: From SA built with Aircraft sensors and LINK 16/MIDS, look in the estimated bearing and range of the mission elements Start a visual search pattern at the estimated location of the contacts Find mission elements visually with NVG		ot Vot Appluc Higher 1	Completion Time: Allowable Delay (K): ¹⁵ Difficulty (D) Sheddable: No able Shed If Late: Not Applicable Cevel Goal No
Auditory Category: 0 None External Cue: Not App) None Not Applicable		Dec	<u>KNOWLEDGE</u> Declarative:
Cognitive Category: 4 Sp Initiating Conditions: Tactical	Cognitive Category:4Spatial encoding, decoding, pattern recognition (reading maps, giving directions)Initiating Conditions:Tactical phase of mission beginsNight, VMC flight conditionsNVG contact with other formation members is required	ons) other formation member		Visual/NVG scan techniques, standard operating procedures, NVG operating procedures
Initiating Actions: Visual cucs and Ending Conditions: NVG contact w Ending Actions: Tactical phase c longer required	 Initiating Actions: Visual cues and other sensor information (Link 16/AMIRS/Radar) are used to begin NVG search for other formation member Ending Conditions: NVG contact with other formation members is establiched Ending Actions: Tactical phase of mission ends Day and/or IMC flight conditions occur NVG contact with other formation members no longer required 	NVG search for other fu	-	Situational: Environmental conditions, tactical situation, mission objectives/requirements
OUTPUT/BEHAVIOUR Voice: 0 None		GNITIVE/PERC Voice: ⁰ None	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	S
Psychomotor: 1 1 Simple Memory: 1 Commit to	 Simple Psychia Commit to memory (LTM and STM) 		 Automatiscd, highly learned Memorization 	
External Influenced Variables Output Interface: NVGs	None			
JT/	and and a state of the state of	OGNITIVE/PER	COGNITIVE/PERCEPTUAL PROCESS	ESS
VISION: 1.2 FAUCH, SP Audition: 0 None	1 2 FRANCHI, SPAHAH ICHAUOSHIP, HAUMIB, BHAPHIC UISPIAJS 0 None		 Эранан сиссопину, ульман рамени и ссоеринион None 	reognition
Kinesthetic: 0 None	Kine	Kinesthetic: 0 None		
Memory: 2.3 Spatially coded	oded	nory:	3 Spatial decoding	
Internal Influenced Variables Input Interface: NVG visual cues	Belief that NVG contact has been established with other formation members	SETS		

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Annex I - CF18 Air to Grou	Ind PCT	Air to Ground PCT Goal Analysis Results	is Results
IP Number 7.3 4 2(f) Goal: that the formation successfully adjusts to medium/high altitude during the earess	ung Goal ID:	ID: 7342(f)	Source Goal: 7211(c)
Description: Establish in a climb/descent while maintaining required ground speed Cross check altitude by visually confirming Barometric Altitude in the HUD Level Off at the desired altitude Cross check that the chosen altitude is at least 1000' above or below TLs		Operator: Pilot Priority: 6 A Interruptable: Yes Resumable: Yes	Ď
Auditory Category: 0 None External Cue: Not Applicable	Fee	Feeds Back to Higher Level Goal De	.evel Goal No <u>KNOWLEDGE</u> Declarative:
E E	vel ops		Aircraft operating instructions, standard operating procedures, tactics, formation keeping procedures
Initiating Actions: Desired tactical formation is maintained Ending Conditions: Egress phase of mission ends Ending Actions: Descent to lower altitude begins			Situational: Tactıcal scenarıo, mıssıon objectives/requirements, cnvironmental conditions
<u>OUTPUT/BEHAVIOUR</u>	COGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar Psyc Memory: 1 Commit to memory (LTM and STM) 1	Psychomotor: Memory:	4 Spatial encoding 5 Memorization	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Output Interface: Aircraft controls and throttles HUD			
INPUT/SENSATION	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, vi	4 Spatial encoding, visual pattern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: 1 2 Complex stumulus Ki	Kinesthetic:	4 Spatial encoding	
Memory: 24 Semantically coded Memory: Internal Influenced Variables Belief that the formation has been established in the medium/high altitude environment Inout Interface: Anreraft altitude/speed Visual cues Sensor information (AMIRS/Radar) Link 16	Memory: tude environment	3 Verbal decoding	

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Annex I - CF18 Air to Gro	und PCT	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7 3 6 1(a) Goal: that the tachcal roles are established in the formation	Goa	Goal ID: 7361(a)	Source Goal: 7251(a)
Description: Indvidual responsibilities in addition to lookout are	Q	Operator: Pilot	Completion Time: 999
Lead terrain avoidance, navigation, tactical control of the formation, mission leader and bombs on target,	Pri	Priority: ⁶ Allow	Allowable Delay (K): Difficulty (D) 0.4
Number three terrain avoidance, back-up navigation, element position keeping. factical control of number four		Interruptable: Yes	Sheddable: No
deputy mission and factical lead and bombs on target,		Resumable: No	Shed If Late: Not Applicable
Wingmen terrain avoidance, position keeping, lookout, bombs on target and monitor sensors	Fee	Feeds Back to Higher Level Goal	Goal No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	level ops		Tactics Standard Operating procedures Applicable orders,
Initiating Conditions: Ingress Is initiated			regulations and plains. Formation responsibilities
Initiating Actions: Attend to individual responsibilities			Situational:
Ending Conditions: Tactıcal roles have been established.			Position in the formation, threat, mission
Ending Actions: Continue attending to individual responsibilities			
OUTPUT/BEHAVIOUR	COGNITIVI	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice: 1 Voice Output	Voice:	3 Speech production	
Psychomotor: 1 2 Difficult but familiar Psy	Psychomotor:	4 Spatial encoding	
Memory: I Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Formation position on Displays	position on Displ	iys	
Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Radios			
INPUT/SENSATION	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Vision: 2 Perpheral	Vision:	1 Automatised, highly learned perception	ed perecption
Audition: 5 Speech input (attended to, salient to the primary task)	Audition:	5 Verbal decoding, speech recognition	ecognition
Kinesthetic: 1 1 Simple stimulus K	Kinesthetic:	1 Automatised, highly learned perception	ed perception
5	Memory:	5 Recall	
Internat Intructiced Variables Detrict that the factured roles have occur established Input Interface: Aircraft displays (HUD,DDI,HSD) Radios			

Contribution Contribution<	Design of the server of pirch and roll to obtem desired Arrspeed and Strong of and Priority: 6 Allows Differ rule: 6 Allows Design any end of geometry Interruptable: Resumable: No Allows Strong of the metry of the pirch and roll to obtem desired Arrspeed and Strong of the metry pathie: Resumable: No Allows Strong of the metry of the metry of the pirch of the metry of the metr	IP Number 7 3 6 1(b) Goal: that arcraft control and flight position arc maintained	Goal ID:	7361(b)	Source Goal: 7251(b)
y uang anayoed or geometry Priority: 6 Allowa Interruptable: No Applicable Resumable: No Applicable Resumable: No Applicable Erects Back to Higher Level C Securation of the mass of the mas of the mass of	y uang anayoed or geometry Priority: 6 Allowa Interruptable: No Applicable Resumable: No Applicable Resumable: No Applicable Interruptable: No Applicable Interruptable: No Applicable Interruptable: No Applicable Interruptable: No Interruptable: Interruptable: No Applicable Interruptable: No Interruptable: Interruptable: No Applicable Interruptable: No Interruptable: Interruptable: No Ancord of the masson completed Interruptable: No Ancord of the masson completed Interruptable: No Ancord Abstrant Control No No Ancord Abstrant Abstrant Abstrant Apply (HUD.DDI,HSD) No Ancord Abstrant Abstrant Apply (HUD.DDI,HSD) No Ancord Abstrant Abstrant Apply and that the tacteal flight poston has been achieved No Ancord Abstrant Abstrant Abstrant Abstrant has been achieved No	ift control and position by adjusting Power. Aircraft nitch and roll to			Completion Time: 999
Interruptable: No Predist Back to Higher Level C Opticable Freeds Back to Higher Level C Opticable Freeds Back to Higher Level C opticable curcurant control curcurant control curcurant control contron off the mission completed, tactical portion initiated No arrent control control control of the mission completed control arrent control volue onton of the mission completed control arrent control volue ortical formol control ortical formol volue arrent control volue ortical formol fremory: arrent control volue arrent control volue often of the mission completed one arrent displays (HUD.DDI.HSD) Anion Arrend position, altitude, heading, speed and g Formation position on Displays I Automatised, highly isamed N vision: I Automatised, highly isamed N vision: I Automatised, highly isamed N interestrin No N	Interruptable: No Resumable: No Feeds Back to Higher Level C supplicable innorzation/recail, calculation, estimation, deduction, reasoning, high level ops c portion completed, tactical portion initiated arcent control arcent for the arcent displays (HUD.DDI,HSD) Arcent hostics Arreat displays (HUD.DDI,HSD) Arcent hostics Arreat displays (HUD.DDI,HSD) Arcent brottes Arreat displays (HUD.DDI,HSD) Arcent for the arcent is ar controlled fight and that the tactect light position has been achieved (HD.DDI,HSD)	Flight Path. Adjust Flight position by using arrspeed or geometry		6	Difficulty (D)
Mean Feeds Back to Higher Level G Discretion Feeds Back to Higher Level G Syphicable concrastruction/ceally, calculation, estimation, deduction, reasoning, high level ops: cinorization/ceally, calculation, estimation, deduction, reasoning, high level ops: reasoning, high level ops: cinorization/ceally, calculation, estimation, deduction, reasoning, high level ops: no cinorization onton of the mission completed, tactical portion initiated arreaft control onton of the mission completed arreaft control onton of the mission completed arreaft control onton of the mission completed arreaft control onton uncard position initiate Psychomotor: tif familiar Psychomotor: uncard position, altritude, heading, speed and g. Formation position on Displays sub and throutes Arreaft displays (HUD,DDI,HSD) None Memory: one Memory: one And filtion: i And throu the arreaft is in controlled flight and that the arceaft flight position Memory: one And filtion: i Memory: one Memory: one	Resumable: No Tedes Back to Higher Level G Statistical information intracted concrastion/ceally calculation, estimation, deduction, reasoning, high level ops: concrastion/ceally calculation, estimation, deduction, reasoning, high level ops: concrastinon/ceally calculation, estimation, deduction, reasoning, high level ops: concrastinon/ceally calculation, estimation, deduction, reasoning, high level ops: concrastinon/ceally calculation, estimation, deduction, reasoning, high level ops: arcraft control contor of the mission completed arcraft control contor of the mission completed arcraft control contor of the mission completed arcraft control contor contor arcraft control contor contor arcraft position, altrude, heading, speed and g. Formation position on Displays cold cold cold interested cold interested cold interested cold interested cold interested cold interested cold intereocing cold		Interrup		ddable: No
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onton of the mission completed arcraft control arcraft control UIB COGNITIVE/PERCEPTUAL PROO UIB Voice: 0 None It familiar Psychomotor: 4 Spatial encoding it familiar Psychomotor: 5 Memorryaic It familiar Psychomotor: 5 Memorryation memory (LTM and STM) Memoryaic 5 Memorration Arcraft position, altitude, heading, speed and g Formation position on Displays 5 Memorration Arcraft position, altitude, ratitude, heading, speed and g Formation position on Displays 1 Automatised, highly icamed Vision: 1 Automatised, highly icamed Vision: 1 Automatised, highly icamed Vision: 1 Automatised, highly icamed Voice: 0 None Pseration Memory: 5 Recall 0 None Pseration Memory: 5 Recall 0 None	MIR COGNITIVE/PERCEPTUAL PROD vortant of the mission completed aurcraft control UIR COGNITIVE/PERCEPTUAL PROD Voice: 0 None uf familiar Psychomotor: 4 Spanal encoding memory (LTM and STM) Memory: 5 Memorzation Aircraft position, altitude, heading, speed and g Formation position on Displays 4 Memory: 5 Memorzation M Aircraft position, altitude, heading, speed and g Formation position on Displays 1 Automatsed, highly icamed M Memory (LTME, PERCEPTUAL PRO 0 None M Vision: 1 Automatsed, highly icamed M Vision: 0 None Memory: 5 Recall 0 None				Situational:
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memory (LTM and STM) Memory: Arrcraft position, altitude, heading, speed and g Formation position on Display ols and throttles Aircraft displays (HUD,DDI,HSD) <u>COGNITIV</u> Vision: <u>N</u> Vision: Audition: Porration Memory: Memory: pocration has the aircraft is in controlled flight and that the tactical flight position has been a	memory (LTM and STM) Memory: Aircraft position, altitude, heading, speed and g Formation position on Display ols and throttles Aircraft displays (HUD,DDI,HSD) <u>COGNITIV</u> Vision: Audition: Audition: Pocration Memory: belief that the aircraft is in controlled flight and that the tactical flight position has been a s (HUD,DDI,HSD)		r		
Aircraft position, altitude, attitude, heading, speed and g Formation position on Display ols and throttles Aircraft displays (HUD,DDI,HSD) <u>N</u> <u>COGNITIV</u> <u>Vision:</u> <u>Naudition:</u> <u>Audition:</u> <u>peration</u> <u>peration</u> <u>Memory:</u> <u>peration</u> <u>peration</u> <u>COGNITIV</u> <u>Sinesthetic:</u> <u>Sin</u>	Aircraft position, altitude, heading, speed and g Formation position on Display ols and throttles Aircraft displays (HUD,DDI,HSD) <u>N</u> <u>Vision:</u> <u>Vision:</u> <u>Audition:</u> <u>Audition:</u> <u>Pocration</u> <u>Belief that the aircraft is in controlled flight and that the tactical flight position has been a</u>			lemorization	
ols and throttles Aircraft displays (HUD,DDI,HSD) <u> N</u> <u> COGNITIV</u> Vision: <u> Nuision:</u> <u> Nemory:</u> <u> Nemory:</u> <u> Nemory:</u> <u> Nemory:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nemory:</u> <u> Nemory:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nuision:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nuision:</u> <u> Nemory:</u> <u> Nuision:</u> <u> Nuisi</u>	ols and throttles Arrcraft displays (HUD,DDI,HSD) M COGNITIV Vision: Vision: Audition: Kinesthetic: opcration Memory: belief that the arrcraft is in controlled flight and that the tactical flight position has been a s (HUD,DDI,HSD)	External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Formation p	osition on Displays		
Image: Second structure COGNITIV Vision: Vision: Vision: Audition: Audition: Kinesthetic: pcration Memory: bclicf that the aircraft is in controlled flight and that the tactical flight position has been a second structure	N COGNITIV Vision: Vision: Vision: Audition: Audition: Kinesthetic: pcratton Memory: bclocf that the arcraft is in controlled flight and that the tactical flight position has been a s (HUD,DDI,HSD)	Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)			
Vision: Audition: Audition: Kinesthetic: portation belief that the aircraft is in controlled flight and that the tactical flight position has been a	Vision: Audition: Audition: preathon belief that the arcraft is in controlled flight and that the tactical flight position has been a s (HUD,DDI,HSD)	INPUT/SENSATION	COGNITIVE/P	ERCEPTUAL PI	ROCESS
Audition: Kinesthetic: pocration Memory: belief that the aircraft is in controlled flight and that the tactical flight position has been	Audition: Audition: ppcration belief that the aircraft is in controlled flight and that the tactical flight position has been is (HUD,DDI,HSD)			utomatised, highly lcarn-	ed perception
Kinesthetic: portation Memory: Memory: belief that the aircraft is in controlled flight and that the tactical flight position has been	Kinesthetic: operation Memory: belief that the aircraft is in controlled flight and that the tactical flight position has been is (HUD,DDI,HSD)			one	
peration Memory: belief that the arcraft is in controlled flight and that the tactical flight position has been i	ppcration Memory: belief that the aircraft is in controlled flight and that the tactical flight position has been is (HUD,DDI,HSD)	0 Nonc		onc	
belief that the aircraft is in controlled flight	belief that the aircraft is in controlled flight s (HUD,DDI,HSD)			ccall	
	Input Interface: Aircraft displays (HUD,DDI,HSD)	belief that the aircraft is in controlled flight	position has been achie	vcd	

Annex I - CF18 Air to Ground PCT Goal Analysis Results	und PCT	Goal Analy	sis Results
IP Number 7 3 6 1(d) Goal: that the pilot confirms the position of the formation by visually referencing his Link 16 display on the HSD Description:	Goal ID:	TD: 7361(d)	Source Goal: 7113(d)
Adjust and/or confirm LINK 16/MIDS Tactical Display parameters to ensure the desired airspace is covered Adjust and/or confirm LINK 16/MIDS Tactucal Displayed information Observe picture being built on the LINK 16/MIDS Reduce range scale to ensure clarity of displayed information members by analyzing displayed information Mentally build formation position and situational awareness		Operator: Pilot Priority: 4 Interruptable: Ycs Resumable: Ycs	Ď
0	r eed	Feeds Back to Higher Level Goal	Level Goal No KNOWLEDGE
External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Taetreal phase of mission begins			Declarative: Aurcraft operating procedures, standard operating procedures, classified aircraft operating procedures, Link 16 displays/controls
Initiating Actions: Visually reference Link 16 tactical display on HSD Ending Conditions: Tactical phase of mission ends Ending Actions: Stop visually referencing Link 16 tactical display on HSD			Situational: Tactocal struation, phase of mission, mission objectives/requirements, correlation of displayed information with information displayed from other sources
OUTPUT/BEHAVIOUR Voice: 0 None	COGNITIVE/ Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	PROCESS
Psychomotor: 11 Simple Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	 Automatised, highly learned Memorization 	ly learned
External Influenced Variables HSD settings/controls Link 16 settings/controls Output Interface: HOTAS HSD Link-16			
INPUT/SENSATION Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	COGNITIV Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recog	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
Audition: 0 None	Audition:	0 None	
0 Nonc	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded Internal Influenced Variables Belief that the formation position has been confirmed on Link 16 factical display	:	3 Spatial decoding	
Input Interface: HSU, Link to Display/Controls			

Annex I - CF18 Air to Groun	I PCT Goal	8 Air to Ground PCT Goal Analysis Results	
IP Number 7 3 6 2(a) Goal: that the ideal factical formation is selected and flown	Goal ID: 73	7 3 6 2(a) Sour	Source Goal: 7 2 5 2(a)
Description: The lead will select the optimal formation for the tactical situation and direct his formation members to adopt formation Wingmen will position their aircraft to optimize formation at the desired range and altitude delta from their lead	Operator: Pilot Priority: 4 Interruptable: No Resumable: Not A	Ď	Completion Time: 999 (K): 1 5 Difficulty (D) 0 2 Sheddable: No Shed If Late: Not Applicable
Auditory Category: 5 Voice Output External Cue: No Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: The overall factical situation has changed		recus back to rugner Level Coal No Declarative: Tactus Stand regulations and	EXAMINO EVALEDGE Declarative: Tactos Standard Operating procedures Applicable orders, regulations and plans
Initiating Actions: Lead selects and directs new appropriate formation Wingmen initiate manouevers to achieve formation Ending Conditions: Correct formation is achieved Ending Actions: Correct formation is maintained	chicve formation	Situational: Mission requir situation (e g	Situational: Mission requirements and objectives Specifies of the factical situation (e g threat/friendly forces, weather, terrain, etc)
UT/BEHAVIOUR	SNITIVE/PERC	COGNITIVE/PERCEPTUAL PROCESS	
Voice: I Voice Output Psychomotor: I 2 Difficult but familiar Psychomotor:		5 Speecin production4 Spatial encoding	
Memory: 1 Commut to memory (LTM and STM) Memory: 5 Memorzation External Influenced Variables All ancraft's positions, altitudes, headings, speeds and g Aircraft's relative positions (formation) Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)	Memory: 5 Mem craft's relative positions (5 Memorization sitions (formation)	
INPUT/SENSATION Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	OGNITIVE/PEH Vision: 4 Spatta	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	ution
Audition: 5 Speech input (attended to, salient to the primary task) Au Kinesthetic: 0 Nonc Kinesthetic: 0 Nonc Kinesthetic: 0 Spatially coded M Memory: 23 Spatially coded M Internal Influenced Variables Lead's belief that present formation is ideal for present tactical situation M Innut Interface: Outside view Radar Link 16/MIDS display (for tactical picture) HUD, DDI	Audition: 5 Verba Kinesthetic: 0 None Memory: 3 Spatta tton	5 Verbal decoding, speech recognition0 None3 Spatial decoding	

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Annex I - CF18 Air	to Ground PCT	8 Air to Ground PCT Goal Analysis Results	kesults
IP Number 7 3 6 2(c) Goal: that awareness and good positioning is maintained on other formation members and/or formation elements using non visual methods	ormation	Goal ID: 7362(c)	Source Goal: 7252(c)
Postchedum. Positional mutual support is maintained by keeping SA on formation members position utilizing sensors and data link Remain within sensor and weapons range to support formation members		Operator: Pilot Priority: 4 Allow Interruptable:	Completion Time: 999 Allowable Delay (K): 1 5 Difficulty (D) Sheddable: No
	Re Fe	Resumable: Not Applicable Feeds Back to Higher Level Goal	Shed If Late: Not Applicable Goal No
		0	KNOWLEDGE
External Cue: No Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	soning, high level ops		Declarative: Tactucs Applicable orders, regulations and plans Standard Operating Procedures Sensor displays and symbology interpretation
Initiating Conditions: Change in tactical environment with respect to beyond visual range formation members or other elements	c formation members or other	r elements	
Initiating Actions: Sensors and or datalink are checked to build updated tactical awareness of BVR friendlys and manouevers are initiated to mai Ending Conditions: Appropriate tactical BVR formation is achieved Ending Actions: Appropriate tactical BVR formation is maintained	eness of BVR friendlys and m	anoucvers are initiated to mai	Situational: Mission Plan Specifics of the tactical situation (e.g. threat/friendly forces, weather, terrain, etc.)
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	DCESS
Voice: 1 Voice Output	Voice:	3 Speech production	
Psychomotor: 0 None Memory: 1 Commut to memory (LTM and STM)	Psychomotor: Memory:	0 None 5 Memorization	
External Influenced Variables None Output Interface: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Radar AMIRS	dar AMIRS		
INPUT/SENSATION Vision: 1.2 Pattern, spattal relattoship, tracking, graphic displays	COGNIT) Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	SOCESS attern recognition
Audition: 5 Speech input (attended to, salient to the primary task)	Audition:	5 Verbal decoding, speech recognition	ccognition
Kinesthetic: ⁰ None	Kinesthetic:	0 None	
Memory: 2.4 Semantically coded Internal Influenced Variables Perception that all formation elements are in position to	Memory: position to give mutual support	3 Verbal decoding	
Input Interface: Radar AMIRS Link 16/MIDS display (for tactical picture) HUD, DDI			

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Annex I - CF18 Air to Gr	TOT puno	8 Air to Ground PCT Goal Analysis Results	kesults
IP Number 7 3 6 2(c) Goal: that all aspects of a proper NVG visual lookout are conducted, including maintaining NVG visual contact with other formation members	-	Goal ID: 7362(e)	Source Goal: 7252(e)
Maintain visual mutual support by maintaining sight with NVG of formation members while establishing visual		Operator: Pilot	Completion Time: 999
lookout Conduct visual lookout responsibilitues	Pri	Priority: ⁹ Allow	Allowable Delay (K): 14 Difficulty (D)
	Int	Interruptable: No	Sheddable: No
	Re	Resumable: Not Applicable	Shed If Late: Not Applicable
	Fe	Feeds Back to Higher Level Goal	Goal No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 2 Passive monitoring of speech/auditory signals			NVG Visual lookout technique Night NVG tactical formation fluing Standard Observing Procedures
Initiating Conditions: Night VMC flying conditions in a tactical arena			
Initiating Actions: All formation members commence a continuous task-shared and appropriate crosscheck of various external cues using NVG's.	crosscheck of variou	ts external cues using NVG's.	Situational:
Ending Conditions: Mission ends or IMC conditions are encountered		0	Mission Plan Specifics of the tactical situation (c g threat/friendly
Ending Actions: New appropriate crosschecks are initiated (I E IMC radar crosscheck)			forces, weather, terrain, etc) Weather conditions, visibility, ambient light
OUTPUT/BEHAVIOUR	ALLINDUD	COCNITIVE/PERCEPTIAL PROCESS	CEGG
Volce: U Nonc	Voice:	U None	
Psychomotor: 1 3 Complex and or unfamiliar	Psychomotor:	5 Memorization/recall, calc	5 Memorization/recall, calculation, estimation, deduction, reasoning
Memory: I Commit to memory (LTM and STM)	Memory:	5 Memonzation	
External Influenced Variables Nonc			
Output Interface: Night Vision Goggles Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)	I,HSD)		
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	attern recognition
Audition: ⁰ None	Audition:	0 None	
Kinesthetic: ⁰ None	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Perception that all aspects of NVG visual lookout technique are being completed, and confirmation that all appropriate formation members are NVG visual	eing completed, and	confirmation that all appropria	tte formation members are NVG visual
Input Interface: Outside view through NVG's, HUD			

Annex I - CF18 Air to Grou	nd PCT	Air to Ground PCT Goal Analysis Results
IP Number 7 3 7 1(a) Goal: that correct ground track is maintained	Goal ID:	ID: 7371(a) Source Goal: 7261(a)
Description: Accurately follow the Ground Track information displayed in the HSD and HUD Fly on the displayed heading required to the next waypoint Monitor heading, drift, routing and ground track information Make appropriate heading corrections to regain and maintain desired ground track	50	Dé
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)		Feeds Back to Higher Level Goal No <u>KNOWLEDGE</u> Declarative: Sensor displays and symbology interpretation Basic navigation techniques
Initiating Conditions: Ancraft's track over ground changes, or requires a change Initiating Actions: HSD and HUD are checked to adjust heading Ending Conditions: Correct groundtrack is achieved Ending Actions: Groundtrack is maintained and monitored		Situational: Specific route and/or map Winds
OUTPUT/BEHAVIOUR Voice: 0 None	OGNITIVI Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None
 Simple Commit to memory (LTM and STM) 	Psychomotor: Memory:	 Automatised, highly learned Memorization
External Influenced Variables Auroraft heading Output Interface: Auroraft controls and throttles Auroraft displays (HUD,DDI,HSD) Maps		
INPUT/SENSATION Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	<u>COGNITI'</u> Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition
Audition: 0 None	Audition:	0 None
Kinesthetic: 0 None Kii	Kinesthetic:	0 None
Memory: 2.3 Spatially coded Internal Influenced Variables Perception that the aircrafts groundtrack corresponds to the desired groundtrack	Memory: bundtrack	3 Spatnal decoding

Annex I - CF18 Air to Grou	und PCT	8 Air to Ground PCT Goal Analysis Results	Results
IP Number 7 3 7 1(b) Goal: that all aspects of an Air Coordination Order are followed	Goa	Goal ID: 7371(b)	Source Goal: 7261(b)
Description: Adhere to Air Coordination Order by accurately following the ACO routing displayed on the HSD Follow ACO Airspeed, Altitude and routing restrictions		Operator: ^{Pilot} Priority: ³ Allo Interruptable: No	Completion Time: ⁹⁹⁹ Allowable Delay (K): 12 Difficulty (D) Sheddable: No
	Re F	Resumable: Not Applicable	
Auditory Category: 0 None	D 4	reeus daer to frigher level goan	
External Cue: Not Applicable			Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	ctions)		Sensor displays and symbology interpretation Applicable orders, regulations and nams Standard Obscrating procedures
Initiating Conditions: An ACO routing or restriction is encountered			
Initiating Actions: HSD Mans and primary instruments(a/s alt etc) are monitored and crosschecked with ACO	ed with ACO		Situational:
Ending Conditions: ACO routing or restriction no longer applies			Spectfic ACO Mission Plan
Ending Actions: Stop attending to goal			
<u>OUTPUT/BEHAVIOUR</u>	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 0 None Psy	Psychomotor:	0 None	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Aircraft position, altitude, attitude, heading, speed and g			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Vision: 11 Text, Dial Reading	Vision:	3 Verbal encoding	
Audition: 0 None	Audition:	0 None	
Kinesthetic: ⁰ None K	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Belief that formation/aircraft is adhereing to planned ACO restriction			
Input Interface: HUD, DDI's, HSD, Map			

Annex I - CF18 Air to G	Ground PC	8 Air to Ground PCT Goal Analysis Results	s Results
IP Number 7 3.7 1(c) Goal: that correct groundspeed is flown in order to comply with tunings		Goal ID: 7371(c)	Source Goal: 7261(c)
Description: Adjust G/S by mercasing or decreasing IAS Monitor ETA over waypoint on the HSD and fine tune G/S as required to arrive at required timing		Operator: Pilot Priority: 6 Al Interruptable: Yes Resumable: No	Completion Time: 10 Allowable Delay (K): Difficulty (D) 01 Sheddable: No Shed If Late: Not Applicable
Ũ	Fe	Feeds Back to Higher Level Goal	vel Goal No <u>KNOWLEDGE</u>
External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: A required tuning exists in the future	, high level ops		Declarative: Sensor displays and symbology interpretation Basic navigation techniques
Initiating Actions: Groundspeed is checked and adjusted based on other timings and navigation/HSD information Ending Conditions: Timing is met Ending Actions: Groundspeed is adjusted based on the next required timing, or groundspped becomes a nonessential item	on/HSD information id becomes a nonessen	tal rtem	Situational: Specific route and/or map Mission Plan Winds
OUTPUT/BEHAVIOUR Voice: 0 None	COGNITIV Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	ROCESS
-	Psychomotor: Memory:	 Automatised, highly learned Memorization 	eamed
External Influenced Variables Aurcraft position, attitude, heading, speed and g Output Interface: Aurcraft controls and throttles Aurcraft displays (HUD,DDI,HSD) Maps			
INPUT/SENSATION Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	COGNIT. Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	PROCESS al pattern recognition
Audition: 0 None	Audition: Kinesthetic:	0 None 0 None	
Memory: 2.3 Spatially coded Internal Influenced Variables Perception that groundspeed is appropriate for next timing	Memory:	3 Spatial decoding	
Input Interface: HUD, DDI's, HSD, Map			

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Annex I - CF18 Air to G	round PCT	Air to Ground PCT Goal Analysis Results	sults
IP Number 7371(d) Goal: that all Air Coordination Order restricted area's are avoided		Goal ID: 7371(d)	Source Goal: 7 2 6 1(d)
Description: Avoid ACO restricted areas by monitoring HSD displayed information and venfying information on the Area MAP		Operator: Pilot Priority: 3 Allował Interruptable: No	Completion Time: 999 Allowable Delay (K): 1 25 Difficulty (D) Sheddable: No
	Fe Re	Resumable: Not Applicable Feeds Back to Higher Level Goal	Shed If Late: Not Applicable al No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	g directions)		Declarative: Sensor displays and symbology interpretation Applicable orders, regulations and plans Standard Operating procedures
Initiating Conditions: An ACO restricted area is encountered			
Initiating Actions: HSD and Maps are monitored and crosschecked with ACO			Situational: Snorfic ACO Mission Plan
Ending Conditions: ACO restructed area no longer applics Ending Actions: Stop attending to goal			
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	CESS
Voice: 0 Nonc	Voice:	0 Nonc	
Psychomotor: 0 None	Psychomotor:	0 Nonc	
Memory: 1 Commut to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Output Interface: Aurcraft controls and throttles Aurcraft displays (HUD,DDI,HSD) Maps			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	DCESS
Vision: 1 1 Text, Dial Reading	Vision:	3 Verbal encoding	
Audition: 0 None	Audition:	0 None	
Kinesthetic: ⁰ None	Kinesthetic:	0 None	
Memory: 2 3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Belief that formation/aircraft is avoiding ACO restricted area			
Input Interface: HUD, DDI's, HSD, Map			

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Description (sensor) information	cosor) information			JULICE COAL	
lect routing on the HSD System navigation in the C	Select routing on the HSD System navigation in the CF-18 is simply a matter of following the displayed routing		Operator: Pilot	Completi	Completion Time: ¹⁰
information on the HSD	•		Priority: 6	Allowable Delay (K):	Difficulty (D) 015
		Int	Interruptable: Yes	Sheddable: No	le: No
		Re	Resumable: No	Shed If I	Shed If Late: Not Applicable
		Fee	Feeds Back to Higher Level Goal	- Level Goal No	
Auditory Category: 0 Nonc					KNOWLEDGE
External Cue: Not Applicable				Declarative:	
4 (Spattal encoding, decoding, pattern recognition (reading maps, giving directions)	ections)		Sensor displays and sy techniques	Sensor displays and symbology interpretation Basic navigation techniques
Inuaung Conditions: General navigation is required	Jurco				
Initiating Actions: HSD is crosschecked with maps	maps			Situational:	
Ending Conditions: Mission ends or more specific navigation aids are required	. Sific navigation aids are required (1 E approach aids)			Specific route and/or map Mission Plan	nap Mission Plan
OUTPUT/BEHAVIOUR		COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS	
Voice: 0 None		Voice:	0 None		
Psychomotor: 0 None	Psy	Psychomotor:	0 None		
Memory: 1 Commit to memory (LTM and STM)	und STM)	Memory:	5 Memorization		
External Influenced Variables Ancraft positi	Aırcraft position, altıtude, attıtude, heading, speed and g				
Output Interface: Aurcraft controls and throttles Aurcraft displays (HUD,DDI,HSD) Maps	Arrcraft displays (HUD,DDI,HSD) Maps				
INPUT/SENSATION		COGNITI	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS	
Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	tracking, graphic displays	Vision:	4 Spatial encoding,	4 Spatial encoding, visual pattern recognition	
Audition: 0 None		Audition:	0 None		
Kinesthetic: 0 None	K	Kinesthetic:	0 None		
Memory: 2.3 Spatially coded		Memory:	3 Spatial decoding		

IP Number 7372(c) Goal: That the Time on Target is achieved accuratly through adjustments of Goal ID: Description: arcraft speed and routing Description: Operato Adjust GS and routing to arrive at target at predetermined TOT. Operato Priority: Adjust GS and routing to arrive at target at predetermined TOT. Operato Priority: Adjust GS and routing to arrive at target at predetermined TOT. Operato Priority: Additory Category: 0 None External Cue: Not Applicable Cognitive Category: 5 Memorization, estimation, deduction, reasoning, high level ops Feeds B Initiating Conditions: A "Time on Target" is pending Resumal Initiating Conditions: A "Time on Target" is pending Memory: None Initiating Conditions: A "Time on Target" is pending Memory: None None Initiating Conditions: Fording actions: Stop attending to goal Initiating Conditions: ToT is achieved None Initiating Conditions: ToT is achieved Ending Actions: Stop attending to goal OUTPUTPULABEHAVIOUR Voite:: None Projece: 0 None Noice: 0 None Noice	
coulting to arrive at target at predetermined TOT. ategory: 0 None nal Cue: Not Applicable itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high levitegory: itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high levitegory: itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high levitegory: itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high levitegory: itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high levitegory: all Cue: Nations: itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high levitegory: all Cue: A "Time on Target" is pending detions: ToT is achieved Actions: Stop attending detitions: ToT is achieved Actions: Stop attending detitions: ToT is achieved detitions: Stop attending detitions: None 0 None I 1 Stop itsingle Anorath controls and throttles Ancraft displays (HUD,DD,HSD) Maps itsingle:	Operator: Pilot Priority: 4 Allowa Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level G Feeds Back to Higher Level G ITTVE/PERCEPTUAL PROO
ategory: 0 None nal Cue: Not Applicable nal Cue: Not Applicable tegory: 5 Memorzation/recall, calculation, estimation, deduction, reasoning, high lev nditions: A "Time on Target" is pending Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation ditions: TOT is achieved Actions: Stop attending to goal Actions: Stop attending to goal UT/BEHAVIOUR 0 None 1 1 Simple 0 None 1 1 Simple 1 Commit to memory (LTM and STM) i Commit to memory (LTM and STM) disc: Aircraft position, altitude, attitude, heading, speed and g ace: Aircraft controls and throtiles Aircraft displays (HUD,DDI,HSD) Maps ace: Aircraft controls and throtiles Aircraft displays (HUD,DDI,HSD) Maps	Interruptable: No Applicable Resumable: Not Applicable Feeds Back to Higher Level G ITTIVE/PERCEPTUAL PROO
ategory: 0 None nal Cue: Not Applicable itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev additions: A "Time on Target" is pending additions: A "Time on Target" is pending additions: TOT is achieved additions: TOT is achieved addit tother achieves Airecaft displays (HUD, DDI, H	Resumable: Not Applicable Feeds Back to Higher Level G
ategory: 0 None nal Cue: Not Applicable itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev iditions: A "Time on Target" is pending Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation iditions: TOT is achieved Actions: Stop attending to goal UT/BEHAVIOUR 0 None 11 Simple 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and	Feeds Back to Higher Level G ITTIVE/PERCEPTUAL PROO
ategory: 0 None nal Cue: Not Applicable itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev aditions: A "Time on Target" is pending Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation aditions: ToT is achieved Actions: Stop attending to goal UT/IBEHAVIOUR O 0 Nonc I 11 Simple Psyci 12 Commit to memory (LTM and STM) I enced Variables Aircraft position, altitude, heading, speed and g isce: Aircraft position, altitude, Aircraft displays (HUD,DDI,HSD) Maps	ITIVE/PERCEPTUAL PRO
nal Cue: Not Applicable itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high lev iditions: A "Time on Target" is pending Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation iditions: TOT is achieved Actions: Stop attending to goal Onc 0 1 Simple 0 None 1 Simple 2 Simple 3 Arcraft position, altitude, heading, speed and g 3 Size: 3 Aircraft displays (HUD,DDI,HSD) Maps	ITIVE/PERCEPTUAL PRO
Itegory: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level Inditions: A "Time on Target" is pending Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation Actions: ToT is achieved Actions: ToT is achieved Actions: ToT is achieved Actions: Stop attending to goal UT/BEHAVIOUR O 0 None 11 Sumple 12 Commit to memory (LTM and STM) Benedation Acting, speed and give diang, speed and give: Arcraft controls and throttles Aurcraft displays (HUD,DDI,HSD) Maps	ITIVE/PERCEPTUAL PRO
nditions: A "Time on Target" is pending Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation iditions: TOT is achieved Actions: Stop attending to goal UT/BEHAVIOUR 0 None 1 Simple 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and STM) interest Arreaft position, altitude, heading, speed and g ace: Arreaft controls and throtites Aircraft displays (HUD,DDI,HSD) Maps	Situational: Specific route and/or map Mission Plan NITIVE/PERCEPTUAL PROCESS voice: 0 None
Actions: Groundspeed is referenced and adjusted vs HSD TOT information and navigation iditions: TOT is achieved Actions: Stop attending to goal UT/BEHAVIOUR 0 None 11 Simple Psyc 1 Commit to memory (LTM and STM) enced Variables Arcraft position, altitude, heading, speed and g introduction introduction introduction	Situational: Specific route and/or map Mission Plan NITIVE/PERCEPTUAL PROCESS Voice: 0 None
Inditions: TOT is achieved Actions: Stop attending to goal UT/BEHAVIOUR 0 None 1 Simple 1 Simple Psyc i Commit to memory (LTM and STM) enced Variables Aircraft position, altitude, heading, speed and g ace: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps	Specific route and/or map Mission Plan NITIVE/PERCEPTUAL PROCESS /oice: 0 None
Actions: Stop attending to goal C UT/BEHAVIOUR 0 0 None 0 1 I Simple Psyc 1 Commit to memory (LTM and STM) Psyc enced Variables Arteraft position, altitude, heading, speed and g ace: Arteraft controls and throtites Arteraft displays (HUD,DDI,HSD) Maps	NITIVE/PERCEPTUAL PROCESS Voice: 0 None
UT/BEHAVIOUR O 0 None 0 1 Simple Psyc 1 Commit to memory (LTM and STM) Psyc enced Variables Aircraft position, altitude, heading, speed and g ace: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps UT/SENSATION	NITIVE/PERCEPTUAL PROCESS
 0 Nonc 11 Sumple Psycial Commut to memory (LTM and STM) 1 Commut to memory (LTM and STM) 1 Commut to memory (LTM and STM) acei Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps CIT/SENSATION 	
 1 Simple 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and STM) 1 Commit to memory (LTM and STM) inced Variables Aircraft position, altitude, heading, speed and g ace: Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps CIT/SENSATION 	
	lotor: 1 Automatised, highly learned
	nory: 5 Memonzation
	COGNITIVE/PERCEPTUAL PROCESS
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays Vision: 4.5	ision: 4 Spattal encoding, visual pattern recognition
Audition: ⁰ Nonc Audition: ⁰ N	ition: 0 None
Kinesthetic: ⁰ None Kinesthetic: ⁰ N	hetic: 0 None
Memory: 2.3 Spatially coded Memory: 3. S	nory: 3 Spatial decoding
Internal Influenced Variables Perception that groundspeed and route is appropriate for TOT	
Input Interface: Outside view.HUD, DDI, HSD, map	

Annex I - CF18 Air to Ground PCT Goal Analysis Results	ound PCT	Goal Anal	ysis Results
IP Number 7 3 7 2(f) Goal: that correct navigation is carried out and confirmed through NVG visual ground references		Goal ID: 7372(f)	Source Goal: 7262(f)
Conduct Navigation by visually finding ground references with NVG to verify that the correct routing is followed		Operator: Pilot	Completion Time: ²⁰
	Pri	Priority: 6	Allowable Delay (K): Difficulty (D) 04
	Int	Interruptable: Ycs	Sheddable: No
	Re	Resumable: No	Shed If Late: Not Applicable
	Fe	Feeds Back to Higher Level Goal	r Level Goal No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable			Declarative:
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	firections)		NVG lookout techniques Sensor displays and symbology
Initiating Conditions: Navigation is required in Night/VMC conditions			
Initiating Actions: Outside NVG visual cues are crosschecked with maps to ensure correct navigation	ation		Situational:
-			Specific route and/or map Mission Plan Weather conditions.
Ending Conditions: IMC conditions are encountered or mission ends Fuding Actions: Other navigation techniques(HSD) are used exclusively			visibility, ambient light
CINTING ACTIONS: Out of the second in the second and the second action of the second action o			
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 3 Complex and or unfamiliar	Psychomotor:	5 Memonzation/re	5 Memorization/recall, calculation, estimation, deduction, reasoning
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g			
Output Interface: Night Vision Goggles Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD) Maps	(,HSD) Maps		
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	JAL PROCESS
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding	4 Spatial encoding, visual pattern recognition
Audition: ⁰ Nonc	Audition:	0 None	
Kinesthetic: ⁰ Nonc	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	
Internal Influenced Variables Perception that NVG visual ground references match those expected from map (and/or memory)	od from map (and/o	r memory)	
Input Interface: Outside view through NVG's, HUD, Map			

Annex I - CF18 Air to Gro	und PC	8 Air to Ground PCT Goal Analysis Results	
IP Number 7 3 7 3(a) Goal: that all significent weather is avoided using both visual and sensor cues		Goal ID: 7373(a) Source Goal: 7263(a)	
Description: Monitor by visually looking outside the cockpit at significant weather build ups Adjust sensors parameter to optimize weather detection and monitor displayed weather on the DDIs Avoid weather by changing routing and flight profile		Operator: Pilot Completion Time: 10 Priority: 2 Allowable Delay (K): 1 Difficulty (D) Interruptable: No Sheddable: No Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No	
	level ops	KNOWLEDGE Declarative: Basic Flying Sensor displays and symbology interpretation	
Initiating Conditions: Significent weather is encountered Initiating Actions: Outside cues and/or radar is monitored and aircraft is manoeuvered to avoid weather Ending Conditions: Weather is no longer a factor Ending Actions: Stop attending to goal	ather	Situational: Visual Lookout Cues Radar cues Study of weather forecast and actual weather	p
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 Nonc	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar Ps Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spatial encoding5 Memorization	
External Influenced Variables Arrcraft position, altitude, attitude, heading, speed and g Output Interface: Radar Aircraft controls and throttles Aircraft displays (HUD,DDI,HSD)			
INPUT/SENSATION	<u>COGNIT</u> Vision	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal eccodium	
Audition: 0 None	Audition:	0 Nonc	
Kinesthetic: 1 1 Simple stimulus	Kinesthetic:	1 Automatised, highly learned perception	
Memory: 2.3 Spatially coded Internal Influenced Variables Perception that aircraft/formation will avoid significent weather Input Interface: Outside view, radar display, HUD	Memory:	3 Spatial decoding	

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Annex I - CF18 Air to G	round PCT	18 Air to Ground PCT Goal Analysis Results	sults
IP Number 7 3 7 3(b) Goal: that all obstacles are avoided	Go	Goal ID: 7373(b)	Source Goal: 7263(b)
Description: Montor obstacles visually Avoid obstacles by changing routing and flight path	o	Operator: Pilot	Completion Time: 999
	Pr	Priority: ¹ Allowab	Allowable Delay (K): Difficulty (D)
	In	Interruptable: No	Sheddable: No
	Re	Resumable: Not Applicable	Shed If Late: Not Applicable
	Fe	Feeds Back to Higher Level Goal	al No
Auditory Category: 0 None			KNOWLEDGE
External Cue: Not Applicable		Ι	Declarative:
Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person)		E	Basic Fiying
Initiating Conditions: An obstacle 1s encountered			
Initiating Actions: Manocurre to avoid obstacle			Situational:
Ending Conditions: Obstacle is avoided, or obstacle avoidance no longer becomes a factor (high level)	ı level)	70	Visual Lookout Cues Knowledge of area obstacles (map study)
Ending Actions: Stop attending to goal		1	
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	ESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar	Psychomotor:	4 Spatial encoding	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memonzation	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g			
Output Interface: Aircraft controls and throttles HUD Maps			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	CESS
Vision: 2 Perpheral	Vision:	I Automatised, highly learned perception	serception
Audition: 0 Nonc	Audition:	0 None	
Kinesthetic: 1 1 Sumple stimulus	Kinesthetic:	1 Automatised, highly learned perception	serception
Memory: 2 1 Accessible, familiar	Memory:	1 Automatised	
Internal Influenced Variables Perception that aircraft is not in conflict with an obstacle			
Input Interface: Outside view, HUD			

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Annex I - CF18 Air to G	8 Air to Ground PCT Goal Analysis Results
IP Number 7373(c) Goal: that all terrain is avoided	Goal ID: 7373(c) Source Goal: 7263(c)
Description: At all times while flying in the low-level environment the primary task is terrain clearance Monitor terrain visually Avoid terrain by changing flight path	III Operator: Pilot Completion Time: 999 Priority: 1 Allowable Delay (K): Difficulty (D) Interruptable: No Sheddable: No Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Terrain is encountered	KNOWLEDGE Declarative: Baste Flytte
Initiating Actions: Manoeuvre to avoid terrain Ending Conditions: Terrain is avoided or no longer becomes a factor (high level) Ending Actions: Stop attending to goal	Situational: Visual Lookout Cucs Knowledge of area terrain (map study) Specific mission plan
OUTPUT/BEHAVIOUR Voice: 0 None Psychomotor: 1 2 Difficult but familiar Memory: 1 2 Difficult but familiar Memory: 1 2 Ommut to memory (LTM and STM) External Influenced Variables Ancraft position, altitude, heading, speed and g Output Interface: Ancraft controls and throttles HUD Maps INPUT/SENSATION I Output Interface: Perpheral Vision: 2 Per	COCINITIVE/PERCEPTUAL PROCESS Voice: 0 Nonc Psychomotor: 4 Spatial encoding Memory: 5 Memorzation Memory: 5 Memorzation Vision: 1 Automatised, highly learned perception Vision: 1 Automatised, highly learned perception Memory: 1 Automatised, highly learned perception Memory: 1 Automatised, highly learned perception Memory: 1 Automatised, highly learned perception

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alysis Results
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Air to Ground
Annex I - CF18 A

IP Number 7373(d) Goal: that all other arcraft are avoided	Goal ID: 7373(d)	Source Goal: 7263(e)
Description: Montor other Aurcraft by establishing cross check between visual look out and sensor information displayed on the HUD and DDIs Avoid other Aurcraft by changing flight path	Operator: Pilot Priority: 1 Interruptable: No Resumable: Not Applic Feeds Back to Higher 1	Completion Time: 999 Allowable Delay (K): Difficulty (D) Sheddable: No cable Shed If Late: Not Applicable Level Goal No
Auditory Category:0 NoncExternal Cue:Not ApplicableCognitive Category:2 Passive monitoring of speech/auditory signalsInitiating Conditions:An aircraft or formation is encounteredInitiating Actions:Manocuvre to avoid aircraftEnding Actions:Stop attending to goalEnding Actions:Stop attending to goal		KNOWLEDGE Declarative: Basic Flying Situational: Visual Lookout Cues Specific mission plan
OUTPUT/BEHAVIOUR Voice: 0 None Voice: 0 None Psychomotor: 1 2 Difficult but familiar Memory: 1 2 Difficult but familiar Memory: 1 2 Ommut to memory (LTM and STM) External Influenced Variables Aircraft position, altitude, heading, speed and g Output Interface: Aircraft controls and throttles HUD Maps Output Interface: Aircraft controls and throttles HUD Maps INPUT/SENSATION Vision: 2 Peripheral Vision: 5 Speech input (attended to, salient to the primary task) Kinesthetic: 11 Simple stimulus Memory: 21 Accessible. familiar	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 Nonc Voice: 0 Nonc Psychomotor: 4 Spatial encoding Memory: 5 Memorization Memory: 5 Memorization Vision: 1 Automatiscd, highly learned perception Memory: 1 Automatiscd, highly learned perception Memory: 1 Automatiscd	PROCESS AL PROCESS I y learned perception becch recognition I y learned perception I y learned perception

Internal Influenced Variables Pcrception that arcraft is not in conflict with another aircraft

Input Interface: Outside view, HUD

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IP Number 738 1(a) Goal: that the desired radar modes and parameters are set for search and monitored by visually referencing the radar display on the right DDI Description: Confirm that the desired Radar modes and parameters are set for search Monitor radar visually on the DDIs Adjust radar azimuth and clevation search to cover assigned airspace Adjust radar azimuth and clevation search to cover assigned airspace Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactual phase of the mission	Goal ID: 7381(a) Source Goal: 7271(a) Operator: Pilot Completion Time: 3 Priority: 4 Allowable Delay (K): 175 Difficulty (D) Interruptable: Yes Sheddable: No Sheddable: No Resumable: Yes Shed If Late: Not Applicablc MowLEDGA Feeds Back to Higher Level Goal No ENOWLEDGE Priority: 4 Allowable Delay (K): 175 Difficulty (D) Resumable: Yes Shed If Late: Not Applicablc MowLeblc Reds Back to Higher Level Goal No ENOWLEDGE ENO Feeds Back to Higher Level Goal No Ender Ender And the content procedures, standard operating procedures, standard operating procedures, standard operating procedures, tradar Gealarative: Ender And the operating procedures, standard oper
Confirm that the desired Radar modes and parameters are set for search. Monitor radar visually on the DDIs Adjust radar azimuth and clevation search to cover assigned airspace Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Auditory Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission	Operator: Pilot Completion Time: 3 Priority: 4 Allowable Delay (K): 1 75 Difficulty (D) Interruptable: Yes Sheddable: No Resumable: Yes Sheddable: No Feeds Back to Higher Level Goal No Interruptable: No Feeds Back to Higher Level Goal No Interruptable: Stadiable: No Feeds Back to Higher Level Goal No Interruptable: Stadiable: No Feeds Back to Higher Level Goal No Interveloptable: No Feeds Back to Higher Level Goal No Interveloptable: No Feeds Back to Higher Level Goal No Interveloptable: No Andreadiable: No Interveloptable: No And
Adjust radar azimuth and elevation search to cover assigned anspace Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission Trificating Actions: Pilot observes the radar coarch meanwhere on the radar dealor on the radar the radar to the radar to be action.	Priority: 4 Allowable Delay (K): 1.75 Difficulty (D) Interruptable: Yes Shed If Late: Not Applicable Resumable: Yes Shed If Late: Not Applicable Feeds Back to Higher Level Goal No Interruptable: Feeds Back to Higher Level Goal No Interruptable: Feeds Back to Higher Level Goal No Interruptable: Arcraft operating procedures, standard operating procedures, standard operating procedures, radar displays/controls Interruptable: Arcraft operating procedures, standard operating procedures, standard operating procedures, radar displays/controls Interruptable: Arcraft operating procedures, standard operating procedures, standard operating procedures, radar displays/controls Interruptable: Arcraft operating procedures, standard operating procedures, radar displays/controls Interruptable: Arcraft operating procedures, standard operating procedures, radar displays/controls Interruptable: Arcraft operating procedures, standard operating procedures, radar displays/controls Interruptable: Arcraft operating procedures, standard operating procedures, radar displays/controls Interruptable: Arcraft operating procedures, weather, terrain Interruptable: Arcraft operatinternents, weather, terrain I
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission	Interruptable: Yes Sheddable: No Resumable: Yes Shed If Late: Not Applicable Feeds Back to Higher Level Goal No NOWLEDGE Email Feeds Back to Higher Level Goal No Endote Email Arcraft operating procedures, standard operating procedures, radar displays/controls Standard operating procedures, standard operating procedures, radar displays/controls Arcraft operating procedures, standard operating procedures, standard operating procedures, radar displays/controls Standard operating procedures, standard operating procedures, radar displays/controls
Auditory Category: 0 None External Cue: Not Applicable External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission	Resumable: Yes Shed If Late: Not Applicable Feeds Back to Higher Level Goal No Image: Standard
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission	Feeds Back to Higher Level Goal No <u>KNOWLEDGE</u> Declarative: Declarative: Arrcraft operating procedures, standard operating procedures, radar displays/controls Situations: Tactical situation, arrcraft altitude/speed, mission objectives/requirements, weather, terrain
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission	KNOWLEDGE Declarative: Arcraft operating procedures, standard operating procedures, radar displays/controls displays/controls Situational: Tactcal situation, arcraft allntude/speed, mission objectives/requirements, weather, terrain
External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission	Declarative: Arrcraft operating procedures, standard operating procedures, radar displays/controls Situational: Taetteal situation, aircraft altitude/speed. mission objectives/requirements, weather, terrain
Cognitive Category: 1 Automatized, highly learned (casy to do for a trained person) Initiating Conditions: Begin the tactical phase of the mission	Arcraft operating procedures, standard operating procedures, radar displays/controls Situational: Taetcal situation, arcraft alntude/speed, mission objectives/requirements, weather, terrain
Initiating Conditions: Begin the tactical phase of the mission Initiating Antions: Pilot observes the radar search measurements on the radar decalary on the radar DDI	Situational: Tactıcal sıtuatıon, aırcrafi alntude/speed, mıssıon objectives/requirements, wcather, terraın
Tritisting Actions . Pilot cheeries the radar coarch norameters on the radar dischart on the right DDI	Situational: Tactıcal sıtuatıon, aırcraft alıtıtude/speed, mıssıon objectives/requirements, weather, terraın
THURDING ACTIVITS. THE COSCIPTS THE TARGET SCALARED PARAMETERS OF THE TAGET MISPING OF THE TIGHT DATA	Tactıcal sıtuatıon, aırcraft altıtude/speed, mıssıon objectives/requirements, weather, terrain
Ending Conditions: Tactcal phase of the mission ends	
Ending Actions: Perform other non-tactical mission tasks	
OUTPUT/BEHAVIOUR COGNIT	COGNITIVE/PERCEPTUAL PROCESS
Voice: 0 None Voice:	2: 0 None
Psychomotor: ¹ 1 Sumple Psychomotor:	: Automatised, highly learned
Memory: ¹ Commut to memory (LTM and STM) Memory:	5 Memonization
External Influenced Variables radar scarch modes, radar antenna elevation, radar azimuth, other radar parameters	SIS
Output Interface: DDI, HOTAS, APG-73	
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS
Vision: 1 1 Text, Dial Reading Vision:	1: 3 Verbal encoding
Audition: ⁰ None Audition:	1: 0 None
Kinesthetic: 1 1 Sumple stimulus Kinesthetic:	: 1 Automatised, highly learned perception
Memory: 2.3 Spatially coded Memory:	: 3 Spatial decoding

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Annex I - CF18 Air to Ground PCT Goal Analysis Results	ind PCT (Goal Analysi	s Results
IP Number 7381(g) Goal: that the pilot accurately monitors and interprets the tactical Link-16 information displayed on his HSD	6 Goal ID:	D: 7381(g)	Source Goal: 7271(h)
Description: The pulot will visually reference his HSD to monitor the Link 16 display	Operator Priority: Interrup ⁱ Resumab	:: Pilot 4 Iable: Yes le: Yes	Completion Time: 5 Allowable Delay (K): 1 5 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Ŭ	Feed	Feeds Back to Higher Level Goal	vel Goal No <u>KNOWLEDGE</u>
External Cue: Not Applicable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Tactical phase of the mission begins Link 16 information is required by the pilot	vel ops t		Declarative: Aucraft operating procedures, standard operating procedures, classified aircraft operating procedures, Link 16 displays/controls
Initiating Actions: Pilot visually references the Link 16 display on the HSD Ending Conditions: Link 16 information is no longer required and/or the tactical phase of the mission ends Ending Actions: Current mission tasks performed Tactical Link 16 information, displayed on the HSD, is no longer monitored	ends HSD, is no longer	monitored	Situational: Tactical situation, phase of mission, mission objectives/requirements, correlation of displayed information with information displayed from other sources
<u>OUTPUT/BEHAVIOUR</u>	OGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 0 Nonc Psyc Memory: 1 Commit to memory (LTM and STM) Psyc	Psychomotor: Memory:	0 Nonc 5 Memorization	
External Influenced Variables Link 16 display settings and parameters Output Interface: HSD, LINK-16			
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	COGNITIV Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recog	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: 0 None K Memory: 24 Semantcally coded	Kinesthetic: Memory:	0 None 3 Verbal decoding	
Internal Influenced Variables Belief that the tactical situation is being monitored on the Link 16 display, and all relevant factical information is being interpreted by the pilot Interface: Link 16 display on HSD, correlation of other factual information (radar/AMIRS/external agencies) with Link 16 displayed information	play, and all relev tal agencies) with	ant tactical information Link 16 displayed infor	is being interpreted by the pilot mation

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Annex I - CF18 Air to Grou	Air to Ground PCT Goal Analysis Results	ysis Results
IP Number 7 3 8 2(a) Goal: that the assigned AMIRS search parameters are set and monitored by visually referencing the AMIRS display on the left DDI	y Goal ID: 7382(a)	Source Goal: 7272(a)
Description: The pilot will set his assigned AMIRS search parameters via HOTAS or manual selection. He will monitor and maintain these parameters by visually checking the AMIRS display on the left DDI. If they need adjusting, he will accomplish this via HOTAS/manual selection of the AMIRS search parameters on the left DDI accomplish this via HOTAS/manual selection of the AMIRS search parameters on the left DDI	d Operator : Pilot vill Priority: 4 Interruptable: Resumable: No	Completion Time: 2 Allowable Delay (K): 1.75 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None	Feeds Back to Higher Level Goal	r Level Goal No KNOWLEDGE
External Cue: Not Applicable External Cue: Not Applicable Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person)		Declarative: Ancraft operating procedures, standard operating procedures, classified ancraft operating procedures, AMIRS displays/controls
 Initiating Conditions: Tactical phase of the mission begins Tactical IR imagery is required by the pilot while operating in day/night VMC conditions Initiating Actions: TDC assigned to the left DDI Pilot visually checks the current AMIRS search parameters displayed on the left DDI. Ending Conditions: TDC re-assigned away from left DDI AMIRS display no longer required 1MC flight conditions encountered Ending Actions: TDC re-assigned away from left DDI AMIRS display no longer monitored 	while operating in day/night VMC imeters displayed on the left DDI. i conditions encountered	Situational: Tactıcal sıtuatıon, aırcraft alıtıude/speed, mıssion objectives/requirements, atmospheric conditions, terrain, time of day
OUTPUT/BEHAVIOUR C	COGNITIVE/PERCEPTUAL	L PROCESS
Voice: 0 None	Voice: 0 Nonc	
Psychomotor: 1 Simple Psyc Memory: 1 Commit to memory (LTM and STM) Psyc	Psychomotor: 1 Automattscd, highly lcarned Memory: 5 Memorization	ghly leaned
External Influenced Variables AMIR search modes, AMIRS search parameters Output Interface: DDI, HOTAS, AMIRS		
INPUT/SENSATION Vision: 1 1 Text, Dial Reading	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal encoding	JAL PROCESS
Audition: 0 None Kinesthetic: 1 1 Sumple stimulus	Audition: 0 None Kinesthetic: 1 Automatised, hi	 None Automatised, highly learned perception
Memory: 2.3 Spatially coded Memory: 2.3 Spatially coded Internal Influenced Variables Belief that the assigned AMIRS search parameters have been set and are being maintained Input Interface: AMIRS display on the left DDI	Memory: 3 Spatial decoding re being maintained	26

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Description: The pilot will maintain an NVG visual scarch pattern throughout all phases of a night mission to ensi umobserved bogcys/bandits are able to engage his formation without being visually observed He accomplishes this by developing a scanning pattern that allows him to scan all of the airspace aroi in a deliberate, sequential fashion For example, he may start by observing his deep six o'clock positio out the left side of the canopy until arriving at the 12 o'clock position He will repeat the same process side of the aircraft, then scarch the extreme vertical above and below his aircraft. This NVG visual so then repeated throughout the mission Auditory Category: 0 None	æ	Operator: Pilot		
nanntain an NVC geys/bandits are. es this by develo sequential fashic e of the canopy u raft, then search inroughout the m inroughout the m	æ	perator: Pilot		
unobserved bogcys/bandits are able to engage his formation without being visually observed the accomplishes this by developing a scanning pattern that allows him to scan all of the airspace arois and a deliberate, sequential fashion For example, he may start by observing his deep six o'clock position ut the left side of the canopy until arriving at the 12 o'clock position He will repeat the same process and of the aircraft, then search the extreme vertical above and below his aircraft This NVG visual so hen repeated throughout the mission Auditory Category: 0 None	æ		Completion Time: 7	ime: 7
He accomplishes thus by developing a scanning pattern that allows him to scan all of the airspace aroin a deliberate, sequential fashion For example, he may start by observing his deep six o'clock position ut the left side of the canopy until arriving at the 12 o'clock position He will repeat the same process ude of the aircraft, then scarch the extreme vertical above and below his aircraft This NVG visual schen repeated throughout the mission Auditory Category: 0 None	£	Priority: ⁹ Al	Allowable Delay (K):	Difficulty (D)
in a deduced active sequential ration. For example, he may start by observing that use play occord position the article active position the will repeat the same process inde of the aircraft, then search the extreme vertical above and below his aircraft. This NVG visual se hen repeated throughout the mission Auditory Category: 0 None		Interruptable: No	Sheddable: No	Vo
ide of the aircraft, then search the extreme vertical above and below his aircraft. This NVG visual se hen repeated throughout the mission Auditory Category: 0 None		Resumable: Not Applicable	ole Shed If Late: Not Applicable	Not Applicable
Ŭ		Feeds Back to Higher Level Goal	vel Goal No	
			KNO	KNOWLEDGE
External Cue: Not Applicable			Declarative:	
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	ing directions)		NVG operating procedures, s scan technique with NVGs	NVG operating procedures, standard operating procedures, visual scan technique with NVGs
Initiating Conditions: Tactical phase of mission begins Operating in night, VMC flight conditions Significant prob Of bogeys/bandits operating in near proximity exists	ons Significant prob C)f bogeys/bandits operating		
Initiating Actions: Begin visual search and sean patterns with NVGs			Situational:	
Ending Conditions: Tactical phase of mission ends IMC flight conditions are encountered Reaction to observed bogey/bandit begins	caction to observed bog	sy/bandıt begıns	Mission objectives/requirement	Mission objectives/requirements, tactical situation, environmental
Ending Actions: Stop visual scarch and scan patterns with NVGs				
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	ROCESS	
Voice: 0 None	Voice:	0 None		
Psychomotor: 1 1 Simple	Psychomotor:	1 Automatised, highly learned	eamed	
Memory: I Commit to memory (LTM and STM)	Memory:	5 Memorization		
External Influenced Variables NVG settings, cockpit lighting, exterior aircraft lighting				
Output Interface: NVGs				
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	, PROCESS	
Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	al pattern recognition	
Audition: 0 None	Audition:	0 None		
Kinesthetic: 0 None	Kinesthetic:	0 None		
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding		

Description: The NVG-equipped pilot will use normal visual cues to allow him to monitor and maintain visual contact with other formation members. In addition, he will use the discreet exterior lighting on other formation member's aircraft to facilitate the visual tracking of his formation aircraft. Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)		Operator: Pilot Priority: 9 Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal Dee	Completion Time: 7 Allowable Delay (K): Difficulty (D) Sheddable: No
 formation members In addition, he will use the discreet exterior lighting on other formation member facilitate the visual tracking of his formation aircraft Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving encoding). 		9 able: No le: Not Applic ck to Higher l	ddable: N
Auditory Category: 0 None External Cue: Not Applicable cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving encoding, pattern recognition (reading maps, giving encoding)		erruptable: No sumable: Not Applicable eds Back to Higher Level (Sheddable: No
Auditory Category: 0 None External Cue: Not Applicable ognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving encoding for the spatial e		sumable: Not Applicable eds Back to Higher Level (
Auditory Category: 0 Nonc External Cue: Not Applicable ognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving control of the contro of the control of the control of the contro of the con		eds Back to Higher Level (Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Applicable ognitive Category: 4 Spatial eccoding, decoding, pattern recognition (reading maps, giving excert accognition (reading maps, giving exce	directions)		Gal No
External Cue: Not Applicable ognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving encoding	directions)		KNOWLEDGE
ognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving encoding in the second se	directions)		Declarative:
			NVG operating procedures, standard operating procedures, visual scan technique with NVGs
Initiating Conditions: NVG contact with formation members is established using NVGs			
مصامحت مرغم معرف المركز المستقلين المركز معرف مستعمل مناماته المستعمة المسلمحت ممامية سميمان مستوادين المستاد ا	to motion MIVG o	outrot on formation mamban	Situational:
Ending Conditions: NVG contact with formation members is no longer required or is lost			Mission objectives/requirements, tactical situation, environmental conditions
		•	
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	CESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 I Simple	Psychomotor:	1 Automatised, highly learned	Ŗ
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables NVG settings, cockpit lighting, exterior aircraft lighting			
Output Interface: NVGs			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	ttern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: 0 Nonc	Kinesthetic:	0 None	
Memory: 2.3 Spatially coded	Memory:	3 Spatial decoding	

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Annex I - CF18 Air to Grou	8 Air to Ground PCT Goal Analysis Results	ysis Results
IP Number 7711(a) Goal: that all factor groups are targeted by the formation IAW the established radar search, sort, and targetting contract	ished Goal ID: 771 1(a)	Source Goal: 7522(a)
The formation members will scan their assigned radar search volume. They will call out all detected targets within The formation members will scan their assigned radar search volume. They will call out all detected targets within their scarch volume to other formation members via Have Quek II/Link 16. The formation lead will assign targeting responsibilities if multiple groups are present. At the roll range, formation members will meld their radars to their assigned group and begin to sort. Narrowing down their radar scan volume, and using a different radar mode optimized for sorting multiple contacts (I e TWS), the formation members study their radar display. As the radar breaks out the multiple targets in the group, each pilot commands a lock on his target. The formation members then call the status of their sort, and then continue the remainder of the intercept as per lead's direction or the mission briefing.	tthin Operator: Pilot adars Priority: 4 Allowable r the Interruptable: Yes the Resumable: Yes n or Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): 1 25 Difficulty (D) Sheddable: No Shed If Late: Not Applicable ir Level Goal No
ο Ž,		<u>Exnovedures</u> <u>Arceaft concerting proceedines</u>
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Tactical phase of mission begins Initiating Actions: Assigned radar search and sort parameters are set	vel ops	Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, tactics Situational:
Ending Conditions: Tactical phase of mission ends Ending Actions: Stop attending to task		Mission objectives/requirements, tactical situation, environmental conditions, aircraft altitude/speed
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	VL PROCESS
0 None		
rsycnomotor: 1.9 Complex and of undatinitation (LTM and STM)	rsycnomotor: 5 Memorization Memory: 5 Memorization	o memorization 5 Memorization
External Influenced Variables Radar search and track modes, radar antenna clevation, radar azimuth, other radar parameters Output Interface: HUD HOTAS APG-73 display	, other radar parameters	
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	PERCEPTUAL PROCESS Spatial encoding, visual pattern recognition
Audition: 0 None Kinesthetic: 1 1 Sımple stımulus	Audition: 0 None Kinesthetic: 1 Automatised, h	0 Nonc 1 Automatised, highly learned perception
Memory: 24 Semantically coded Internal Influenced Variables Belief that the radar contract has been properly employed Input Interface: Radar Link-16	Memory: 3 Verbal decoding	

Annex I - CF18 Air to Ground PCT Goal Analysis Results	d PCT G	oal Analy	sis Results
IP Number 7711(g) Goal: that all enemy contacts on the the Link 16 display are acquired	Goal ID:); 7711(g)	Source Goal: 7522(g)
Description: Acquiring enemy contacts on the Link 16 display involves interpreting the link 16 information displayed on the HSD Contacts that have been positively identified as enemy, will normally be colored red. This enemy contact information can then be passed from the Link 16 to one of the on-board targeting sensors (1 e the AMIRS or Radar), or used to carry-out a visual acquisition of the contacts (employing NVGs if conducting night operations)		Operator: Pilot Priority: 4 Interruptable: Ycs Resumable: Ycs	Completion Time: Allowable Delay (K): 1 5 Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 None	Feeds]	Feeds Back to Higher Level Goal	Level Goal No KNOWLEDGE
Ë	(suc		Declarative: Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures
Initiating Actions: Link 16 display on HSD is visually referenced Ending Conditions: Tactical phase of mission ends Ending Actions: Enemy contacts on Link 16 display are no longer a factor/are ignored			Situational: Mission objectives/requirements, tactical situation
OUTPUT/BEHAVIOUR CO	<u>GNITIVE/P</u>	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Voice: 0 None	Voice: 0	0 None	
Psychomotor: 0 None Psych Memory: 1 Commit to memory (LTM and STM) M	Psychomotor: 0 Memory: 5	0 None 5 Memorization	
External Influenced Variables Nonc Output Interface: Link-16 display			
INPUT/SENSATION Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	OGNITIVE Vision: 4	/PERCEPTU Spattal encoding,	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spathal encoding, visual pattern recognition
Audition: ⁰ None A Kinesthetic: 0 None Kine	Audition: 0 Kinesthetic: 0	0 None 0 None	
mantically coded ables Belief that enemy contacts have been acquired on Link 16 display	Memory: 3	3 Verbal decoding	
Input Intertace: Luk 10			

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Annex I - CF18 Air to Groun	Air to Ground PCT Goal Analysis Results	esults
IP Number 7711(m) Goal: that all unknown radar contacts are interrogated accurately and in a timely fashion	Goal ID: 7711(m)	Source Goal: 7271(g)
The pilot will slave the IFF to the targets being tracked by the APG 73 Then, using HOTAS, he will command the IFF to interrogate the unknown radar contacts He will monitor the interrogation results on his radar display Once the contacts have been interrogated, he will pass the results of the IFF interrogation via secure voice or Link 16 or both	Operator: Pilot Priority: 3 Interruptable: No Resumable: Not Applic	Completion Time: Allowable Delay (K): 15 Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
Auditory Category: 0 None External Cite: Not Amilicable	Feeds Back to Higher Level Goal	ioal No <u>KNOWLEDGE</u> Declarative:
Ra		Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, tactics
Initiating Actions: Initiate IFF interrogation of unknown radar contact Ending Conditions: IFF interrogation complete Unknown radar contact is identified as friend or foe Ending Actions: Inform others of IFF interrogation results via Link 16		Situational: Mission objectives/requirements, correlation of IFF information with other tactical information displayed
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	CESS
Voice: 0 None	Voice: 0 None	
Psychomotor: 1 1 Simple Psychomotor: Memory: 1 Commit to memory (LTM and STM) Memory:	homotor: 1 Automatised, highly learned Memory: 5 Memorization	P
External Influenced Variables IFF interrogator settings/controls Output Interface: IFF interrogator		
<u>INPUT/SENSATION</u> Vision: 1 2 Pattern, spattal relattoship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	OCESS ttem recognition
Audition: 0 None A	Audition: 0 None	
Kinesthetic: ⁰ None Kine	Kinesthetic: 0 Nonc	
	Memory: 3 Verbal decoding	
Internal Influenced Variables Belief that unknown radar contacts have been interrogated with IFF		
Input Interface: Radar Link-16 IFF		

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Annex I - CF18 Air to Gro	und PCT	8 Air to Ground PCT Goal Analysis Results	cesults
IP Number 7 7 1 1(n) Goal: that Have Quick II secure communications are employed by all formation members in a clear, concise fashion	Goa	Goal ID: 771 (n)	Source Goal: 7422(b)
The pilot reports the target via secure voice transmission when using Have Quick II. The transmission is sent using Comm 1 or 2 (whichever one is configured for Have Quick II transmission)		Operator: Pilot Priority: 4 Allowable Interruptable: Ycs Resumable: Ycs	Completion Time: Allowable Delay (K): ¹⁵ Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 5 Voice Output External Cue: No Cognitive Category: 3 Verbal encoding, decoding, speech production, listening	5		Declarative: Arcraft operating procedures, standard operating procedures, classified aircraft operating procedures, standard communications
Initiating Conditions: Tactical phase of mission begins Secure voice communications required Initiating Actions: Have Quick II secure communications initiated Ending Conditions: Tactical phase of mission ends Secure voice communications not required/possible Ending Actions: Cease Have Quick II secure communications	ibic		format/procedures Situational: Mission objectives/requirements, tactical situation, environmental conditions, radio range/Ini-of-sight limitations, complex comm jamming encountered
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	DCESS
Voice: 1 Voice Output Psychomotor: 11 Simple Ps	Voice: Psychomotor:	 Speech production Automatised, highly learned 	led
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables COMM 1/2 controls UFC Output Interface: Have Quick II COMM 1/2			
INPUT/SENSATION Vision: 11 Text, Dial Reading	<u>COGNITI</u> Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal encoding	ROCESS
Audition: 5 Speech input (attended to, salient to the primary task)	Audition:	5 Verbal decoding, speech recognition	ecognition
Kinesthetic: 0 None	Kinesthetic:	0 None	
Memory: 2.4 Semantically coded Mem Internal Influenced Variables Belnef that secure communications have been employed using Have Quick II Input Interface: COMM 1/2 Have Quick II	Memory: Quick II	3 Verbal decoding	

Annex I - CF18 Air to Grour	nd PCT	Air to Ground PCT Goal Analysis Results	
IP Number 7722(b) Goal: that chaff is dispensed	Goal ID:	ID: 7722(b) Source Goal: 7523(b)	
Description: Chaff is dispensed by selecting the desired program on the ALE-47 controls, and either by activating the canopy panic button or via HOTAS controls		Ď	ty (D) cable
Auditory Category: 1 Tone or Simple Auditory Sign External Cue: No	Fee	Feeds Back to Higher Level Goal No <u>KNOWLEDGE</u> Declarative:	E
ť		Mission objectives/priorities, tactical situation, weather, terrain, threat activity and location Intelligence on enemy electronic order of battle,	ituation, weather, terrain, ; on enemy electronic order of
Initiating Actions: Enther Chaff HOTAS switch is used or chaff multiple dispense button is depressed Ending Conditions: Chaff is dispensed Ending Actions: Stop attending to goal		Situational: Type of threat	
OUTPUT/BEHAVIOUR	OGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 1 Sumple Psych Memory: 1 Commit to memory (LTM and STM) 1	Psychomotor: Memory:	 Automatised, highly learned Memorization 	
External Influenced Variables Aucraft speed, g Aureraft configuration (chaff/flare bundles) Output Interface: DEWS ALR 67 (rwr)			
INPUT/SENSATION Vision: 11 Text, Dial Reading	COGNITIV Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal encoding	
Audition: 1 Tone or simple auditory signal	Audition:	1 Automatised, highly learned perception	
Kinesthetic: 1 1 Sumple stanulus Kinesthetic: 1 2 Sumple stanulus	Kinesthetic:	1 Automatised, highly learned perception	
chef that chaff has been succesfully deployed	Memory:	3 Spatial decoding	
Input Interface: DEWS ALR 67 (rwr)			

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Annex I - CF18	nd PCT	Goal Analy	sis Results	
IP Number 77.22(c) Goal: that all correlated radar threats are jammed effectively	Goa	Goal ID: 7722(c)	Source Goal: 7523(c)	
Description: The Jammers generally function automatically The pilot can optimize Jammers employment by analyzing their the Jammers generally function automatically coverage on the Integrated HSD display, ensuring that the intended enemy threats are within the displayed Jammers coverage If the enemy threats are outside the displayed Area, the pilot will manoeuvre the aureaft to place the threats within coverage		Operator: Pilot Priority: 3 Allo Interruptable: No Resumable: Not Applicable	Completion Time: Allowable Delay (K): Difficulty (D) Sheddable: No cabic Shed If Late: Not Applicabic	y (D) abic
	Fee	Feeds Back to Higher Level Goal	Level Goal No	
Auditory Category: 1 Tone or Simple Auditory Sign			KNOWLEDGE	<u>3E</u>
External Cue: No			Declarative:	
Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Correlated radar threat is deemed a priority sufficient to require Jamming	(suoi		Aurcraft operating procedures, standard operating procedures, classified aurcraft operating procedures, tactics, enemy tactics, enemy electronic order of battle	operating procedures, tactics, enemy tactics, enemy
Initiating Actions: Observe tamming is being applied to correlated radar threat			Situational:	
Ending Actions: Observe jamming has ccased	20		Mission objectives/requirements, tactical situation, aircraft altitude/flight path/speed, environmental conditions	l situation, aircraft l conditions
OUTPUT/BEHAVIOUR	DGNITIVI	COGNITIVE/PERCEPTUAL	L PROCESS	
Voice: 0 None	Voice:	0 None		
Psychomotor: 1 1 Sumple Psych	Psychomotor:	1 Automatised, highly learned	ily learned	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Mcmorization		
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Jammer controls/settings Output Interface: Jammer display HSD RWR	ols/settings			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS	
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding,	Spatial encoding, visual pattern recognition	
Audition: I Tone or sumple auditory signal	Audition:	1 Automatised, higl	1 Automatised, highly learned perception	
Kinesthetic: ⁰ None Kin	Kinesthetic:	0 Nonc		
Memory: 2.4 Semantically coded	Memory:	3 Verbal decoding		
Internal Influenced Variables Belief that jammers have been effectively employed				
Input Interface: RWR Link 16 Enemy radar/missile activity				

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	Annex I - CF18 Air to Ground	d PCT (Air to Ground PCT Goal Analysis Results	
IP Number 7723(c) Go	Goal: that all air weapons employed by the enemy are negated	Goal ID:	D: 7723(e) Source Goal:	oal: 7524(e)
Description: The pılots wıll Negate Enemy Aır Weapons Emple weapons effective range and by employing DEWS	Description: The pilots will Negate Enemy Air Weapons Employment by manoeuvring and remaining outside enemy air weapons effective range and by employing DEWS	Operator: Priority: Interrupta Resumable Feeds Bacl	Pilot 1 Allowable Delay (ble: No 2: Not Applicable k to Higher Level Goal No	Completion Time: (K): Difficulty (D) Sheddable: No Shed If Late: Not Applicable
Auditory Category: 0 External Cue: Nov Cognitive Category: 5 1 Initiating Conditions: Enemy	 None Not Applicable Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Memorization has been detected 		Declarative: Aircraft operatin classified aircraf order of battle, c weapons Situational:	KNOWLEDGE Declarative: Arreraft operating procedures, standard operating procedures, classified aircraft operating procedures, tactics, enemy tactics, enemy order of battle, enemy weapons, effective actions to defeat enemy weapons Situational:
Initiating Actions: Manocuvre the alferant Ending Conditions: Enemy arr weapon has been defeated Ending Actions: Continue with visual look out	uvre the aircrait air weapon has been defeated ue with visual look out		Aırcraft altıtude type/rangc/altıtu	Aircraft altitude/flight path/speed, environmental conditions Enemy type/range/altitude/position Type of weapon employed
OUTPUT/BEHAVIOUR		GNITIVE	COGNITIVE/PERCEPTUAL PROCESS	
			0 Nonc	
Psychomotor: 13 Complex Memory: 1 Commit	 1.3 Complex and or unfamiliar Psycho Psycho<td>Psychomotor:</td><td>> Memorization/recail, calculation, csumation, deduction, reasoning 5 Memorization</td><td>i, deduction, reasoning</td>	Psychomotor:	> Memorization/recail, calculation, csumation, deduction, reasoning 5 Memorization	i, deduction, reasoning
External Influenced Variables Aucraft posit Output Interface: Aucraft controls and throttles	es Aurcraft position, altitude, attitude, heading, speed and g Aurcraft counter measures ntrols and throttles	er measures		
INPUT/SENSATION Vision: 1 2 Pattern, spat	al relatioship, tracking, graphic displays	Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	
3	Auditory pattern	Audition:	3 Verbal decoding	
Kinesthetic: 0 None	Kine	Kinesthetic: (0 None	
Memory: 2.5 Complex operation Internal Influenced Variables Belief Input Interface: RWR, enemy missile	operation Belief that the missile has been defeated nissile	Memory:	5 Recall	

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airborne radar guided missiles are defeated	irborne radar guided missiles are defeated		DOULCE CUAL.
Description: The Air-to-Air RMD is initially performed by an aggressive manoeuvre into the Notch (at 90 degrees from incoming enemy radar) while employing Chaff Manocuvrc the aircraft downwards to ensure that enemy radar will be looking through ground clutter Update heading to maintain the Notch by assessing DEWS displayed information At the appropriate range, transition into IRMD		Operator: Pilot Priority: 2 Allow Interruptable: No Resumable: Not Applicable	Completion Time: Allowable Delay (K): 1 1 Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
	Ŗ	Feeds Back to Higher Level Goal	Goal No
			KNOWLEDGE
External Cue: No			Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Enemy has launched a missile	asoning, high level ops		Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, tactics, enemy tactics, enemy order of battle, enemy weapons, effective actions to defeat enemy weapons
Initiation Actions. Mancenture the autoraft			Situational:
Ending Conditions: Encary is no longer in a Radar missile WEZ Ending Actions: Stop attending to goal			Aurcraft alttude/flight path/speed, environmental conditions Enemy type/range/alttude/position Type of weapon employed
OUTPUT/BEHAVIOUR	COGNITIN	COGNITIVE/PERCEPTUAL PROCESS	OCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar	Psychomotor:	4 Spatial encoding	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memonzation	
External Influenced Variables Aircraft position, altitude, attitude, heading, speed and g Aircraft counter measures Output Interface: Aircraft controls and throttles	dg Aırcraft counter measures	¢	
INPUT/SENSATION	COGNIT	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	pattern recognition
Audition: 3 Auditory pattern	Audition:	3 Verbal decoding	
Kinesthetic: 1 1 Sumple stumulus	Kinesthetic:	I Automatised, highly learned perception	ned perception
Memory: 2.5 Complex operation	Memory:	5 Recall	

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Annex I - CF18 Air to Groun	d PCT	Air to Ground PCT Goal Analysis Results	
IP Number 7724(g) Goal: that appropriate actions are taken to counter threat displayed on the RWR	Goal ID:	ID: 7724(g) Source Goal: 7421(b)	
Description: The primary reference for displayed RWR threat emission information is the HSD. When a spike is displayed visually/aurally to the pilot, his reaction will be based on the range and lethality of the spike. If he can correlate the spike to a non-lethal threat, his reaction will likely be to continue to remain outside the threat's lethal engagement zone, or to engage and kill the enemy before it has an opportunity to engage his aircraft		Operator: Pilot Completion Time: Priority: 2 Allowable Delay (K): 1 Difficulty (D) Interruptable: No Sheddable: No	
If he correlates the spike on his HSD to a threat that poses a lethal threat to his aircraft, the pilot must react defensively He will use a combination of aggressive manoeuvres, chaft/flare, jamming, and deception to try and defeat the enemy radar and/or missiles		Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No	
		<u>KNOWLEDGE</u> Declarative:	
External Cue: NO Cognitive Category: 5 Mcmonzation/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: RWR threat has been detected	sdo	Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, tactics, enemy tactics, enemy order of battle, enemy weapons RWR interpretation	occdurcs, ny tactics, enemy t
		Situational:	
Ending Actions: Manocuvic unclanation Ending Conditions: Enemy is no longer a threat Ending Actions: Monitor enemy and RWR		Enemy type/rangc/altitude/position Type of weapon employed Information displayed on RWR	remployed
OUTPUT/BEHAVIOUR	GNITIVE	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar Psych	Psychomotor:	4 Spatial encoding	
Memory: 1 Commut to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Ancraft position, altitude, attitude, heading, speed and g Ancraft counter measures Output Interface: Ancraft controls and throttles	er measures		
INPUT/SENSATION	OGNITIV	COGNITIVE/PERCEPTUAL PROCESS	
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	
Audition: 3 Auditory pattern	Audition:	3 Verbal decoding	
Kinesthetic: ⁰ Nonc Kin	Kinesthetic:	0 None	
cd :f that the enemy is no longer a threat	Memory:	3 Verbal decoding	
Input Interface: RWR,HUD,DDI,HSD			

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Annex I - CF18 Air to Gro	ound PCT	Air to Ground PCT Goal Analysis Results	ysis Results
IP Number 7 7 3 5(a) Goal: that the CF-18 is manocuvered to a position relative to the enemy where Air-to-Air weapons can be employed		Goal ID: 7735(a)	Source Goal: 7527(a)
While conducting the intercept, the enemy aircraft will transition from one weapons engagement zone to the next		Operator: Pilot	Completion Time:
As the Aircraft approaches closer and the enemy reacts, a series of Offensive BFM manoeuvres are executed to enter and remain into WF7s.		Priority: ⁴	Allowable Delay (K): 1 25 Difficulty (D)
	Int	Interruptable: Yes	Sheddable: No
	Re	Resumable: Yes	Shed If Late: Not Applicable
	Fe	Feeds Back to Higher Level Goal	r Level Goal No
Auditory Category: 1 Tone or Simple Auditory Sign			KNOWLEDGE
External Cue: No			Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	level ops		Aurcraft operating procedures, standard operating procedures, classified aircraft oncrating procedures, tactics, enemy tactics, enemy
Initiating Conditions: Enemy aurcraft has been detected			order of battle, enemy weapons Basic Fighter Manocuvres
Initiating Actions: Manocuvre the arcraft			Situational:
Ending Conditions: Aircraft is within WEZ			Aureraft altitude/flight path/speed, environmental conditions Enemy
Ending Actions: Maintain position			a portantized and a support of the post of
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	L PROCESS
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar	Psychomotor:	4 Spatial encoding	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memonzation	
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g			
Output Interface: Aircraft controls and throttles HUD			
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	AL PROCESS
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding	4 Spatial encoding, visual pattern recognition
Audition: 0 None	Audition:	0 None	
Kinesthetic: 1 1 Sumple stimulus	Kinesthetic:	1 Automatised, hig	1 Automattsed, highly learned perception
Memory: 2.5 Complex operation	Memory:	5 Recall	
Internal Influenced Variables Behef that the arreaft has entered WEZ			
Input Interface: HUD, enemy arcraft			

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Annex I - CF18 Air to Ground	Air to Ground PCT Goal Analysis Results	sis Results
IP Number 7 7 3 5(b) Goal: that the weapons solution is validated for weapons release	Goal ID: 7735(b)	Source Goal: 7221(g)
Description: Confirm visually on the HUD that all required delivery parameters have been attained for release Ensure that the proper weapon is selected and that the TDC is assigned to the appropriate display for delivery. Confirm visually on the HUD that the Master ARM is in the ARM position Visually confirm that the desired release symbology is displayed and is valid for release. Confirm that the displayed arm point is on the DMPI (Desired Mean Point of Impact)		Ď
_o ž ,	Feeds Back to Higher Level Goal Dec	Level Goal No <u>KNOWLEDGE</u> Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Aircraft has achieved weapons release parameters and point of release is approaching	S	Aircraft operating procedures Tactics Standard Operating procedures Weapons operating procedures
Initiating Actions: Visually confirm weapon solution Ending Conditions: Weapons solution has been validated Ending Actions: Monitor weapons solution		Situational: Mission requirements and objectives Specifics of the tactical situation (e g threat/finendly forces, weather, terrain, etc.) Type of weapons delivered
OUTPUT/BEHAVIOUR COG	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
0 None		
Psychomotor: V NORE Psychomotor: V NORE NORE Psychomotor: Nemory: I Commit to memory (LTM and STM)	homotor: U None Memory: 5 Memonzation	
External Influenced Variables Weapons release symbology Output Interface: HUD and Master Arm switch		
INPUT/SENSATION COO Vision: 1.1 Text, Dial Reading	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal encoding	AL PROCESS
Audition: ⁰ None Audi	Audition: 0 None	
0 None Kit	nesthetic: 0 None Mamory: 3 Verbal decoding	
hat the weapons solution displayed is valid for weapons release		

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Annex I - CF18 Air to Gro	und PCT	8 Air to Ground PCT Goal Analysis Results	
IP Number 7735(c) Goal: that Air-to-Air weapons are launched to destroy the enemy	Goal ID:	ID: 7735(c) Source Goal: 7527(c)	
Description: Select the desired A/A weapon via HOTAS Ensure that a valid solution is displayed Employ A/A weapons by pressing the tragger on the control stick Monitor weapon fly out and support missile if required		Operator: Pilot Completion Time: Priority: 2 Allowable Delay (K): 1 2 Difficulty (D) Interruptable: No Sheddable: No Applicable Resumable: Not Applicable Shed If Late: Not Applicable	
Auditory Category: 1 Tone or Simple Auditory Sign	Fee	Feeds Back to Higher Level Goal No KNOWLEDGE	
External Cue: No External Cue: No Cognitive Category: 5 Mcmorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Aircraft is within WEZ and weapon solution has been verified	level ops	Declarative: Aurcraft operating procedures, standard operating procedures, classified aircraft operating procedures, tactics	ng procedures,
Initiating Actions: Press on the trugger Ending Conditions: Weapon has been launched Ending Actions: Monitor weapon fly out		Situational: Type of weapon employed Arreraft altitude/flight path/speed, environmental conditions Enemy type/range/altitude/position	ight path/speed, altitude/position
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 0 None	Voice:	0 None	
Psychomotor: 1 2 Difficult but familiar Ps Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spatial encoding5 Memorization	
External Influenced Variables Wcapon symbology, weapon scparation Output Interface: HUD, HOTAS			
È	COGNITI Vicion	COGNITIVE/PERCEPTUAL PROCESS	
VISION: 1.2 Francin, spanial relationship, use while, graphic use property and the standing of a second stand	Audition:	1 Automatised, highly learned perception	
Kinesthetic: 1 1 Simple stimulus	Kinesthetic:	1 Automatised, highly learned perception	
Memory: 24 Scmantically coded Internal Influenced Variables belief that the desired weapon has been launched Input Interface: HUD, DDI	Memory:	3 Verbal decoding	

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Annex I - CF18 Air to Gro	und PCT	Air to Ground PCT Goal Analysis Results	S
IP Number 7735(c) Goal: that the engagement is cgressed without compromising survival or tactical advantage		Goal ID: 7735(e) So	Source Goal: 7525(f)
Description: Once enemy attack has been negated, egress engagement by unloading the aircraft while applying maximum power Employ a series of check turns to visually monitor threat		Operator: Pilot Completi Priority: 2 Allowable Delay (K): 1 Interruptable: No Sheddabl	Completion Time: ay (K): 12 Difficulty (D) Sheddable: No
	Rec Fee	Resumable: Not Applicable Feeds Back to Higher Level Goal	Shed If Late: Not Applicable No
Auditory Category: 0 None External Cue: Not Applicable		Declarative:	<u>KNOWLEDGE</u> ative:
Y III	level ops	Aurcraft classific order of	Ancraft operating procedures, standard operating procedures, classified ancraft operating procedures, tactics, enemy tactics, enemy order of battle, enemy weapons Basic Fighter Manoeuvres
Initiating Actions: Unload g Ending Conditions: Aurcraft is outside enemy WEZ Ending Actions: Monitor enemy aurcraft		Situational: Aırcraft altıtud type/range/altı	Situational: Aırcraft altıtude/flight path/speed, envıronmental conditions Enemy type/rangc/altıtude/position
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 1 Voice Output	Voice:	3 Speech production	
1.2 Difficult but familiar	Psychomotor:	4 Spatial encoding 5 Memorization	
Memory: 1 Commut to memory (L1M and S1M) External Influenced Variables Aircraft position, altitude, attitude, heading, speed and g Output Interface: Aircraft controls and throttles HUD	Memory:	5 Memorization	
INPUT/SENSATION	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	Sa
Vision: 1.2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	ognition
Audition: 5 Speech input (attended to, salient to the primary task)	Audition:	5 Verbal decoding, speech recognition	ч
Kinesthetic: 1 1 Simple stimulus	Kinesthetic:	1 Automatised, highly learned perception	tion
Memory: 2.5 Complex operation Tetranol Traditional Variability Relief that the arread is no longer within immediate danger from the engagement	Memory: be engagement	5 Recall	
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Annex I - CF18 Air to Grou	nd PCT (Air to Ground PCT Goal Analysis Results	ults
IP Number 7735(g) Goal: that the weapons fly out is monitored and assessed for results and/or follow on actions	or Goal ID:	D: 7735(g)	Source Goal: 7527(g)
Description: Monitor weapon fly out visually and support missile as required Monitor Radar display Follow on with additional weapons if required	Ope Prio Inter Resu Feed	Operator: Pilot Priority: 4 Allowable Interruptable: Yes Resumable: Yes Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): ¹ 3 Difficulty (D) Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 Nonc External Cue: Not Apphcable Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Wcapon has been launched	el ops	De Cta	<u>KNOWLEDGE</u> Declarative: Ancraft operating procedures, standard operating procedures, classified ancraft operating procedures, tactics, enemy tactics, enemy order of battle, enemy weapons
Initiating Actions: Visually monitor displays Ending Conditions: Weapon has impacted target Ending Actions: Stop attending to goal		Si En	Situational: Enemy type/rangc/altitude/position Type of weapon employed.
OUTPUT/BEHAVIOUR	OGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	<u>SS</u>
Voice: 0 None	Voice:	0 None	
Psychomotor: 0 None Psyc Memory: 1 Commit to memory (LTM and STM) Psyc	Psychomotor: Memory:	0 None 5 Memorization	
External Influenced Variables Nonc Output Interface: HUD,DDI			
INPUT/SENSATION	COGNITIV Vision	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Snatral encoding visual nation	CESS n recommition
VISION: 1.2.1 AUGUST, Spanar Manvarip, uservice, stepping approximation of Audition: 0 None	Audition:	0 Nonc	3
0 None	Kinesthetic:	0 Nonc	
Memory: 24 Semantically coded Internal Influenced Variables Belief that the weapon has impacted the target	Memory:	3 Verbal decoding	
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Annex I - CF18 Air to Groun	d PCT G	Air to Ground PCT Goal Analysis Results
IP Number 7741(a) Goal: that a detailed scan of the airspace surrounding the aircraft and the formation is conducted in order to detect enemy SAMs and AAA	Goal ID:): 7741(a) Source Goal: 7421(a)
Description: The pilot conducts a visual lookout by scanning the airspace in a 360 degree pattern around his aircraft. The visual lookout provides a final layer of protection against undetected air-to-air or surface-to-air threats or targets that may be trying to engage the pilot's formation of aircraft		Operator:PilotCompletion Time:Priority:2Allowable Delay (K):1Difficulty (D)Interruptable:NoSheddable:NoResumable:Not ApplicableShed If Late:Not ApplicableFeeds Back to Higher Level GoalNoNo
Auditory Category: 0 None External Cue: Not Applicable Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Aircraft has entered enemy territory	(suc	KNOWLEDGE Declarative: Visual lookout procedures, tactics, enemy order of battle, enemy weapons
Initiating Actions: Start visual scan Ending Conditions: Aurspace has been scanned Ending Actions: Stop attending to goal		Situational: Arcraft alttude/flight path/speed, environmental conditions
VIOUR	<u>GNITIVE/F</u>	COGNITIVE/PERCEPTUAL PROCESS
Voice: 0 Nonc Psychomotor: 1 2 Difficult but familiar	Voice: 0 Psychomotor: 4	0 None 4 Spatial encoding
mmt to memory (LTM and STM) iables None	Memory: ⁵	5 Memonzation
Output Interface: Nonc		
ION teral	VII	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automatised, highly learned perception
Audition: 0 Nonc A Kinesthetic: 1 I Simple strmulus Kine	Audition: 0 Kinesthetic: ¹	0 None 1 Automatised, highly learned perception
Memory: 2.3 Spatially coded Internal Influenced Variables Belief that the auspace has been scanned for threats Input Interface: Surrounding anspace	Memory: 3	3 Spatial decoding

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Annex I - CF18 Air to Grou	Air to Ground PCT Goal Analysis Results	
IP Number 774 1(b) Goal: that appropriate actions are taken to counter threat displayed on the RWR	Goal ID: 774 1(b) Source Goal: 742 1(b)	(4)
The primary reference for displayed RWR threat emission information is the HSD. When a spike is displayed visually/aurally to the pilot, his reaction will be based on the range and lethality of the spike. If he can correlate the spike to a non-lethal threat, his reaction will likely be to continue to remain outside the threat's lethal engagement zone, or to engage and kill the enemy before it has an opportunity to engage his ancreat.	Operator: Pilot Completion Ti c Priority: 2 Allowable Delay (K): 1 2 Interruptable: No Sheddable: N	me: Difficulty (D) o
If he correlates the spike on his HSD to a threat that poses a lethal threat to his aircraft, the pilot must react defensively. He will use a combination of aggressive manoeuvres, chaft/flare, jamming, and deception to try and defeat the enemy radar and/or missiles	Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No	lot Applicable
		KNOWLEDGE
External Cue: No Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: RWR threat has been detected		Declarative: Aurcraft operating procedures, standard operating procedures, classified aurcraft operating procedures, tactics, enemy tactics, enemy order of battle, enemy weapons RWR interpretation
Initiating Actions: Manoeuvre the aurcraft Ending Conditions: Enemy 1s no longer a threat Ending Actions: Monutor cnemy and RWR	Situational: Enemy type/rangc/altitude/positi Information displayed on RWR	Situational: Enemy type/range/altitude/position Type of weapon employed Information displayed on RWR
UT/BEHAVIOUR	VE/	
Voice: 0 route Psychomotor: 1 2 Difficult but familiar Psych	Voice: U Nonc Psychomotor: 4 Spatial encoding	
Memory: I Commit to memory (LTM and STM)	Memory: 5 Memonzation	
External Influenced Variables Ancraft position, altitude, attitude, heading, speed and g Ancraft counter measures Output Interface: Ancraft controls and throttles	measures	
INPUT/SENSATION Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	
Audition: 3 Auditory pattern	Audition: 3 Verbal decoding	
Kinesthetic: ⁰ None Kin	Kinesthetic: 0 None	
Memory: 24 Semantically coded Internal Influenced Variables Belief that the enemy is no longer a threat Input Interface: RWR.HUD.DDI.HSD	Memory: 3 Verbal decoding	

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		Annex I - CF18 Air to Ground PCT Goal Analysis Results	PCT Goal Analy	sis Results
IP Number 7741(d) Description:	4 1(d) Goal:	that a detailed scan of the airspace surrounding the aircraft and the formation is conducted in order to detect enemy SAMs and AAA	Goal ID: 7741(d)	Source Goal: 7421(g)
The NVG-equipped arcraft The visual and targets that may	I pilot conducts a vi lookout provides a be trying to engag	The NVG-equipped pilot conducts a visual lookout by scanning the airspace in a 360 degree pattern around his aircraft. The visual lookout provides a final layer of protection against undetected air-to-air or surface-to-air threats and targets that may be trying to engage the pilot's formation of aircraft	Operator: Pilot Priority: 7 Allowable Interruptable: Yes Resumable: Yes Feeds Back to Higher Level Goal	Completion Time: Allowable Delay (K): Difficulty (D) Sheddable: Shed If Late: Not Applicable Level Goal No
Auditory Category: External Cue: Cognitive Category: Initiating Conditions:	gory: 0 None I Cue: Not App gory: 4 Spati gory: Ancraft ha:	Auditory Category: 0 None External Cue: Not Applicablc Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Aircraft has entered enemy territory		KNOWLEDGE Declarative: Visual lookout procedures with NVG, tactucs, enemy tactucs, enemy order of battle, enemy weapons
Initiating Act Ending Condii Ending Act	Initiating Actions: Start visual scan Ending Conditions: Airspace has been scanned Ending Actions: Stop attending to goal	scan s been scanned ing to goal		Situational: Aırcraft altıtude/flıght path/speed, environmental conditions
OUTPUI	OUTPUT/BEHAVIOUR		COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Voice: Psychomotor:	 None Difficult but familiar 	Derroha	Voice: 0 None	
Memory:	1 Commit to m	LTM and STM)		
External Influenced Variables Output Interface: NVGs		Nonc		
<u>INPUT</u> Vision:	INPUT/SENSATION ision: 12 Pattern, spatt	al relatioship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recogn	E/PERCEPTUAL PROCESS 4 Spatial encoding, visual pattern recognition
Audition:	0 None	Audition:	on: 0 None	
Kinesthetic:	0 None	Kinesthetic:	tic: 0 None	
Memory: 2.3 Spatially Internal Influenced Variables Input Interface: NVGs	8	ded Memory: Belief that the airspace has been scanned for threats	ry: 3 Spatial decoding	

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Annex I - CF18 Air to G	ound PCT	Air to Ground PCT Goal Analysis Results	
IP Number 7741(e) Goal: that the detected threat information is passed to formation members in a clear and concise manner using directive then descriptive commentary	na	Goal ID: 7741(c) Source Goal: 752(f)	
Description: The pilot advises formation members and controlling agency on visually acquired threats by voice on Have quick II radio, discreet radio or by Data Link communications If turnediate actions are required, the pilot will conduct a Directive then Descriptive commentary of the visually acquired threats If no Immediate action are required, then the pilot uses the standardized description of the visually acquired contacts location and information	=	Operator: Pilot Completion Time: Priority: 1 Allowable Delay (K): Difficulty (D) Interruptable: No Sheddable: No Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Hicher Level Goal No	
41		6	
External Cue: No Cognitive Category: 3 Verbal encoding, decoding, speech production, listening Initiating Conditions: Threat has been detected		Aircraft opcrating procedures, standard opcrating procedures, classified aircraft operating procedures, tactics, enemy order of battle, enemy weapons Tactical communication procedures	ing procedures, , enemy tactics, enemy nunication procedures
Initiating Actions: Key the appropriate radio Ending Conditions: Threat information has been passed Ending Actions: Stop attending to goal		Situational: Encmy type/rangc/altitude/position Type of wcapon cmployed	capon employed
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	
Voice: 1 Voice Output	Voice:	3 Speech production	
Psychomotor: 1 I Simple Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	 Automatised, highly learned Memonization 	
External Influenced Variables Radio output Output Interface: Autoraft controls, radio			
INPUT/SENSATION Vision: 0 Nonc	COGNIT Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 0 None	
Audition: 5 Speech input (attended to, salient to the primary task)	Audition: Kinesthetic	5 Verbal decoding, speech recognition 0 None	
Kinesthetic: U NOLE Memory: 2.2 Verbally coded Internal Influenced Variables Belief that the threat information has been passed and received	Memory:	3 Verbal decoding	
Input Interface: Kadio			

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Annex I - CF18 Air to G	round PCT	Air to Ground PCT Goal Analysis Results	cesults
IP Number 7751(a) Goal: that high speed flight is safely and efficiently conducted	Goa	Goal ID: 7751(a)	Source Goal: 7751(a)
Description: Accomplished by advancing the throttles, usually to at least MIL power or higher, and allowing the arreraft to accelerate along a level to slightly descending flight path. Once the desired airspeed is attained, the throttles are adjusted as required to maintain the target speed, and aircraft attitude is adjusted in a conventional manner reference the velocity vector in the HUD As well, during high speed flight, heavy manocuvering is kept to a minimum to avoid depletion of aircraft energy due to load forces	0 216	Operator: Pilot Priority: 6 Allowable Interruptable: Ycs Resumable: Ycs Feeds Back to Higher Level Goal	Completion Time: 999 Allowable Delay (K): Difficulty (D) 0.2 Sheddable: No Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 None External Cue: Not Applicable			<u>KNOWLEDGE</u> Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Decision is made to conduct high speed fight	gh level ops		Aircraft operating instructions, aircraft handling techniques, standard operating procedures, specific orders and regulations
Initiating Actions: Advance the throttles Montor aurcraft flight parameters in HUD Properly control aurcraft as acceleration occurs and high spe Ending Conditions: High speed is no longer required or desired Ending Actions: Reduce throttles Monitor aurcraft flight parameters in HUD Properly control aurcraft as deceleration to lower speed is achieved	ontrol aucraft as acc l aurcraft as decelera	n HUD Properly control aurcraft as acceleration occurs and high spe ID Properly control aurcraft as deceleration to lower speed is	Situational: Mission requirements/objectives, aircraft altitude. fuel status, environmental conditions, tactical situation
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	DCESS
Voice: 0 None	Voice:	0 Nonc	
Psychomotor: 1 2 Difficult but familiar Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spattal encoding 5 Memorization	
External Influenced Variables Arrcraft position, altitude, attitude, heading, speed and g Output Interface: Aircraft controls, Throttles, HUD			
INPUT/SENSATION Vision: ^{2 Penpheral}	<u>COGNITI</u> Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 1 Automattscd, highly learned perception	ROCESS ed perception
Audition: 0 None	Audition:	0 None	
Kinesthetic: 1 1 Sımple sumulus	Kinesthetic:	1 Automatised, highly learned perception	cd perception
Memory: 2.3 Spatially coded Internal Influenced Variables Belief that high speed flight has been employed safely and efficiently	Memory: ^{ntly}	3 Spatial decoding	
Input Interface: HUD, throttle and arcraft controls, arcraft flight characteristics			

Annex I - CF18 Air to G	round PC	Air to Ground PCT Goal Analysis Results	is Results
IP Number 7751(c) Goal: that all known threat envelopes are avoided	ଁ 	Goal ID: 7751(c)	Source Goal: 7751(c)
Description: During the mission planning phase all known threat envelopes are plotted reference the mission routing using the most current intelligence reports Formation altitude, routing, and tactics are then decided upon that will ensure that all known threats are avoided to the maximum extent possible. Once in-flight, the pilot references his HSD to note his present position, flight path, and the location of all known threat envelopes displayed via MIDS. If his flight path will fail inside one of the threat rings depicted on the HSD (normally a red ring or a red 3-D volume of airspace), he manoeuvers laterally and/or vertically to ensure the threat ring will be avoided. Aircraft speed may also be adjusted in order to achieve the desired result	a at	Operator: Pilot Priority: ³ Allowable Interruptable: No Resumable: Not Applicable Feeds Back to Higher Level Goal	Completion Time: 15 Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable Level Goal No
Auditory Category: 0 Nonc External Cue: Not Applicable			<u>KNOWLEDGE</u> Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Ingress phase of mission, at/beyond FLOT Threat envelopes a factor	gh level ops		Standard operating procedures, classified aircraft operating procedures, intelligence on enemy electronic order of battle, tactics
Initiating Actions: Monitor position reference known threat envelope locations (using HSD/maps/intelligence) Ending Conditions: Egress phase of mission, threat envelopes no longer a factor Ending Actions: Stop monitoring location of known threat envelopes Attend to other current mission tasks	s/intelligence) mission tasks		Situational: Mission objectives/priorities, tactical situation, weather, terrain, threat activity and location
OUTPUT/BEHAVIOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Voice: 0 None	Voice:	0 Nonc	
Psychomotor: 1 2 Difficult but familiar Memory: 1 Commit to memory (LTM and STM)	Psychomotor: Memory:	4 Spatial encoding 5 Memorization	
External Influenced Variables Aircraft position, altitude, heading, speed and g Observe threat envelopes on HSD, status of DEWs Output Interface: HSD, LINK-16, EGI, HUD, DEWs, Aircraft Controls, Throttles	e threat envelopes c	n HSD, status of DEWs	
YT(COGNIT	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays Audition:	Vision: Audition:	4 Spattal encoding, visual pattern recognition	ial pattern recognition
Kinesthetic: 1 1 Sumple stimulus	Kinesthetic:	1 Automatised, highly learned perception	earned perception
Memory: 2.5 Complex operation Internal Influenced Variables Belief that all significant threat envelopes have been avoided	Memory:	5 Rccall	
Input Interface: Link 16 display on HSD, status of DECM suite, correlated factical information, visual confirmation of lack of missile launches from correlated fineats	al confirmation of	lack of missile launches fro	m correlated threats

Annex I - CF18 Air to Ground	8 Air to Ground PCT Goal Analysis Results	s Results
IP Number 7 7 5 1(d) Goal: that a montal target area tactical picture is built	Goal ID: 7751(d)	Source Goal: 7221(m)
Description: Adjust and/or confirm LINK 16/MIDS Tactical Display parameters to ensure the desired airspace in the Target area is covered. Observe picture being built on the LINK 16/MIDS Tactical Display. Visually confirm position of formation members as well as other Finendly. Aureraft, Elements or Sections conducting operation within the target area. Monitor Adversary Disposition in the target Area by analyzing displayed information. Mentally build general picture and situational awareness	Operator: Pilot Priority: 5 Interruptable:	wable Delay (
	Resumable: Not Applicable Feeds Back to Higher Level Goal	ile Shed If Late: Not Applicable vel Goal No
Auditory Category: 1 Tone or Simple Auditory Sign		KNOWLEDGE
External Cue: No		Declarative:
Cognitive Category: 5 Mcmorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: Target area is approaching	<i>n</i>	Mission objectives/priorities, factical situation, weather, terrain, threat activity and location
Initiating Actions: Link 16/MIDS and/or ather sources are crosschecked to confirm target area tactical picture	ure	Situational:
Ending Conditions: Target 1s Impending and tactical picture is sufficiently built		Mission objectives/priorities, tactical situation, weather, terrain,
Ending Actions: Target attack is carried out		עודכם בכנוירוץ מות וסכמוסנו
OUTPUT/BEHAVIOUR COG	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Voice: 1 Voice Output	Voice: 3 Speech production	
Psychomotor: ⁰ Nonc Psychomotor:	otor: 0 None	
Memory: I Commit to memory (LTM and STM)	Memory: 5 Mcmorization	
External Influenced Variables None		
Output Interface: DDI Link 16/MIDS Radios		
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS	PROCESS
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision: 4 Spatial encoding, visual pattern recognition	ial pattern recognition
Audition: 2 Speech input (incidental to the primary task) Aud	Audition: 2 Passive (pre-attentive	2 Passive (pre-attentive) monitoring of auditory signals
Kinesthetic: 1 1 Sumple stimulus Kinesthetic:	etic: 1 Automatised, highly learned perception	earned perception
Memory: 2.5 Complex operation Mei	Memory: 5 Recall	
Internal Influenced Variables A belief that the mental target area preture is sufficient		
Input Interface: DDI Link 16/MIDS Radios		

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Annex I - CF18 Air to Ground	Air to Ground PCT Goal Analysis Results
IP Number 7752(a) Goal: that appropriate actions are taken to counter threat displayed on the RWR	Goal ID: 7752(a) Source Goal: 7421(b)
The primary reference for displayed RWR threat emission information is the HSD. When a spike is displayed visually/aurally to the pilot, his reaction will be based on the range and lethality of the spike. If he can correlate the spike to a non-lethal threat, his reaction will likely be to continue to remain outside the threat's lethal engagement zone, or to engage and kill the enemy before it has an opportunity to engage his aircraft.	Operator: Pilot Completion Time: Priority: 2 Allowable Delay (K): 1 2 Difficulty (D) Interruptable: No Sheddable: No
If he correlates the spike on his HSD to a threat that poses a lethal threat to his aircraft, the pilot must react defensively. He will use a combination of aggressive manocuvres, chaft/flare, jamming, and deception to try and defeat the enemy radar and/or missiles	Resumable: Not Applicable Shed If Late: Not Applicable Feeds Back to Higher Level Goal No
Auditory Category: 3 Auditory Pattern External Cue: No	<u>KNOWLEDGE</u> Declarative:
Cognitive Category: 5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Initiating Conditions: RWR threat has been detected	Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, tactics, enemy order of battle, enemy weapons RWR interpretation
Initiating Actions: Manoeuvre the aurcraft	Situational:
Ending Conditions: Enemy 1s no longer a threat Ending Actions: Monitor enemy and RWR	Enemy type/range/alttude/position Type of weapon employed Information displayed on RWR
OUTPUT/BEHAVIOUR COG	COGNITIVE/PERCEPTUAL PROCESS
Voice: 0 None	Voice: 0 None
1 2 Difficult but familiar Psyc	4
Memory: 1 Commut to memory (LTM and STM) Men	Memory: 5 Memorzation
External Influenced Variables Aurcraft position, altitude, attitude, heading, speed and g Aurcraft counter measures Output Interface: Aurcraft controls and throttles	asurcs
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS
Vision: 1.2 Pattern, spatial relatioship, tracking, graphic displays	Vision: 4 Spattal encoding, visual pattern recognition
Audition: 3 Auditory pattern Aud	Audition: 3 Verbal decoding
Kinesthetic: ⁰ None Kinesthetic:	etic: 0 None
	Memory: 3 Verbal decoding
Internal Influenced Variables Belief that the enemy is no longer a threat Input Interface: RWR,HUD,DD1,HSD	

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Annex I - CF18 Air to Groun	nd PCT	Air to Ground PCT Goal Analysis Results	sults
IP Number 7752(b) Goal: that all correlated radar threats are Jammed effectively	Goal ID:	ID: 7752(b)	Source Goal: 7523(c)
Description: The Jammers generally function automatically The pilot can optimize Jammers employment by analyzing their coverage on the Integrated HSD display, ensuring that the intended enemy threats are within the displayed Jammers coverage. If the enemy threats are outside the displayed Area, the pilot will manocuvre the aircraft to place the threats within coverage		Operator: Pilot Priority: 3 Allowabl Interruptable: No Resumable: Not Applicable	Completion Time: Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
	Feed	Feeds Back to Higher Level Goal	al No
			KNOWLEDGE
EXTERTIAL CUE: NO Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions)	ions)	a <	Declarative: Aircraft opcrating procedures, standard operating procedures,
Ŭ 		el Cl	classified aircraft operating procedures, tactics, enemy tactics, enemy electronic order of battle
Initiating Actions: Observe jamming is being applied to correlated radar threat		S	Situational:
Ending Conditions: Correlated radar threat no longer constitutes a threat sufficement to warrant jamming Ending Actions: Observe jamming has ceased	50	al M	Mission objectives/requirements, tactical situation, aircraft altitude/flight path/speed, environmental conditions
OUTPUT/BEHAVIOUR	JGNITIVE	COGNITIVE/PERCEPTUAL PROCESS	ESS
Voice: 0 None	Voice:	0 Nonc	
Psychomotor: 1 1 Simple Psych	Psychomotor:	1 Automatised, highly learned	
Memory: 1 Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Variables Aircraft position, altitude, attitude, heading, speed and g Jammer controls/settings Output Interface: Jammer display HSD RWR	ols/settings		
INPUT/SENSATION	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	CESS
Vision: 1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	m recognition
Audition: 1 Tone or sunple auditory signal	Audition:	1 Automatised, highly learned perception	vereeption
Kinesthetic: ⁰ None Kine	Kinesthetic:	0 None	
	Memory:	3 Verbal decoding	
Internal fulluenceu variaties bench und jannues nave ocen enecuvely employed Input Interface: RWR Link 16 Enemy radar/missile activity			

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Annex I - CF18 Air to C	round PC	CF18 Air to Ground PCT Goal Analysis Results	ilts
IP Number 7752(c) Goal: that chaff is dispensed	Ŝ	Goal ID: 7752(c)	Source Goal: 7523(b)
Description: Chaff is dispensed by selecting the desired program on the ALE-47 controls, and either by activating the canopy painte button or via HOTAS controls		Operator: Pilot Com Priority: 2 Allowable Delay (K): Interruptable: No Shei Resumable: Not Applicable Shei Feeds Back to Higher Level Goal No	Completion Time: Delay (K): 1 1 Difficulty (D) Sheddable: No Shed If Late: Not Applicable No
Auditory Category: 1 Tone or Simple Auditory Sign External Cue: No Cognitive Category: 1 Automatized, highly learned (easy to do for a trained person) Initiating Conditions: Chaff is required		Decla Mission threat a battle,	KNOWLEDGE Declarative: Mission objectives/priorities, tactical situation, weather, terrain, threat activity and location Intelligence on enemy electronic order of battle,
Initiating Actions: Eather Chaff HOTAS swatch is used or chaff multiple dispense button is depressed Ending Conditions: Chaff is dispensed Ending Actions: Stop attending to goal	oressed	Situ Typ	Situational: Type of threat
OUTPUT/BEHAVIOUR Voice: 0 None	COGNITIV Voice:	COGNITIVE/PERCEPTUAL PROCESS Voice: 0 None	21
Psychomotor: 1 1 Sumple Memory: 1 Commut to memory (LTM and STM)	Psychomotor: Memory:	 Automatused, highly learned Memorization 	
External Influenced Variables Aucraft speed, g Aucraft configuration (chaff/flare bundles) Output Interface: DEWS ALR 67 (rwr)			
INPUT/SENSATION Vision: 1-1 Text, Dial Reading	<u>COGNITI</u> Vision:	COGNITIVE/PERCEPTUAL PROCESS Vision: 3 Verbal encoding	SS2
Audition: 1 Tone or sumple auditory signal Kinesthetic: 1 Sumple stimulus Memory: 2 3 Spatially coded Internal Influenced Variables A belief that chaff has been succesfully deployed Input Interface: DEWS ALR 67 (rwr)	Audition: Kinesthetic: Memory:	 Automatised, highly learned perception Automatised, highly learned perception Spatial decoding 	cption

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Annex I - CF18 Air to G	ب Air to Ground PCT Goal Analysis Results	ysis Results
IP Number 7753(a) Goal: that terrain masking is used to avoid enemy radar	Goal ID: 7753(a)	Source Goal: 7.7 2 1(f)
Description: If able, aircraft routing is chosen during the mission planning phase to maximize the pilot's ability to exploit the terrain along his route to his advantage. If not, the pilot chooses his flight path visually and then descends his aircraft to low altitude. The pilot manœuvers his aircraft laterally and vertically in order to ensure that the local terrain blocks the line-of-sight between his aircraft and the enemy		wable Delay (
	Kesumable: Not Applicable Feeds Back to Higher Level Goal	plicable Shed II Late: Not Applicable r Level Goal No
-		Prodemetion.
EXTERTIAL CLUE: NOT Applicative Cognitive Category: 4 Spatial encoding, decoding, pattern recognition (reading maps, giving directions) Initiating Conditions: Terrain masking is required to avoid or lose an enemy radar	directions)	Dectarative: Intelligence on encmy electronic order of battle Classified aircraft operating instructions
Initiating Actions: Terrain is placed between enemy radar and aircraft Ending Conditions: Enemy radar is avoided Ending Actions: Stop attending to goal		Situational: Type of threat Tactical situation
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	NL PROCESS
Voice: 0 None	Voice: 0 None	
Psychomotor: 1 2 Difficult but familiar Momonue 1 Commit to memory (LTM and STM)	Psychomotor: 4 Spatial encoding Memory: 5 Memorization	20
External Influenced Variables Aucraft position, altitude, attitude, heading, speed and g Output Interface: Visual lookout ALR 67 (rwr) Link 16/MIDS		
Ľ	<u>VI</u>	UAL PROCESS
Vision: 1 1 Text, Dial Reading Audition: 0 None	Vision: 3 Verbal encoding Audition: 0 None	
Kinesthetic: 1 1 Sumple strmufus	Kinesthetic: 1 Automatised, high	Automatised, highly learned perception
Memory:2 1Accessible, familiarInternal Influenced VariablesA belief that terrain masking has been succesfully deployedInput Interface:Visual lookout ALR 67 (rwr)Link 16/MIDS	Memory: 1 Automatised	

Description: As part of his systems check on the spilot ensures the system is set to automate mode The HSD and he is employing defensive counts as to maximize the effectiveness manoeuvering, AAMD, IRCM, a fit to optimize the desired result and it to optimize the desired result between the desired result be	Description: As part of his systems check on the ground the pilot ensures that the defensive counter measures suite is loaded and configured properly He then ensures it passes all respective BIT tests on start-up During the fence-in check, the pilot ensures the system is set to AUTO to allow systems such as on-board Jammers to function in their normal, automatic mode The HSD and HUD are the primary references for RWR and HSD information for the pilot when he is comploying defensive countermeasures Using this displayed information, the pilot will position his arreaft so as to maximize the effectiveness of his RWR and Jammer Conventional defensive counter measures such as heavy manoeuvering, AAMD, IRCM, and the employment of chaff/flare from the ALE-47 will be used as the pilot decima fit to optimize the desired result			
As part of his systems check on t configured properly He then ens pilot ensures the system is set to automatic mode The HSD and 1 he is employing defensive counti as to maximize the effectiveness manoeuvering, AAMD, IRCM, <i>i</i> fit to optimize the desired result Auditory Category: 1 External Cue: 1 Cognitive Category: 5	he ground the pilot ensures that the defensive counter measures suite is locures it passes all respective BIT tests on start-up. During the fence-in chec AUTO to allow systems such as on-board jammers to function in their noi HUD are the primary references for RWR and HSD information for the pilot built position has an of his RWR and Jammer. Conventional defensive counter measures such and the employment of chaff/flare from the ALE-47 will be used as the pilot built built built built built built built.			
computed properly the used en- pilot ensures the system is set to- automatic mode The HSD and 1 he is employing defensive counit as to maximize the effectiveness manoeuvering, AAMD, IRCM, is fit to optimize the desired result Auditory Category: 1 External Cue: 1 Cognitive Category: 5	AUTO to allow systems but used as on-board jammers to function in their not AUTO to allow systems such as on-board jammers to function in their not HUD are the primary references for RWR and HSD information for the pi immeasures. Using this displayed information, the pilot will position his an of his RWR and Jammer. Conventional defensive counter measures such, and the employment of chaff/flare from the ALE-47 will be used as the pil Toxor of Sumalo Autoritor. Sum	р	Pilot	pletion Ti
automatic mode The HSD and Hall as comploying defensive counting as to maximize the effectiveness manoeuvering, AAMD, IRCM, a fit to optimize the desired result Auditory Category: 1 External Cue: 1 External Cue: 3 Cognitive Category: 5	HUD are the primary references for RWR and HSD information for the pi immeasures. Using this displayed information, the pilot will position his air of his RWR and Jammer Conventional defensive counter measures such, and the employment of chaff/flare from the ALE-47 will be used as the pil Transor Sumalo Author. Sum			Allowable Delay (K): 11 Difficulty (D)
 Composing contrast to contrast a stomatic state of the contrast and an anoeuvering, AAMD, IRCM, an anoeuvering, AAMD, IRCM, and an anoeuvering, and a stored result Auditory Category: 1 External Cue: 1 Cognitive Category: 5 	of his RWR and Jammer Conventional defensive counter measures such and the employment of chaff/flare from the ALE-47 will be used as the pil		Interruptable: No	Sheddable: No
manocuvering, AAMD, IrKoM, a fit to optimize the desired result Auditory Category: 1 External Cue: 7 Cognitive Category: 5	Ind the employment of chart/flare from the ALE-4/ will be used as the pli Transor Sumalo Authors, Sum		Resumable: Not Applicable	Shed If Late: Not Applicable
	Tono or Cimulo Auditory Cim		Feeds Back to Higher Level Goal	Goal No
	i dire di annipie Auditoly aign			KNOWLEDGE
	No			Declarative:
	5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	h level ops		Aurcraft operating procedures, standard operating procedures, classified aurcraft operation procedures, enemy electronic order of
Initiating Conditions: Tac	Initiating Conditions: Tactical phase of mission Threat exists significant enough to require the employment of defensive counter measures	loyment of defensiv	ve counter measurcs	battle, tactics, intelligence reports
Initiating Actions: Deter	Initiating Actions: Determine type/order of defensive countermeasures to be employed(avoidance/manoeuvers/chaff/flare/jamming/terrain maski	c/manoeuvers/chaff	iflare/jamming/tcrrain maski	Situational:
Ending Conditions: Thre	Ending Conditions: Threat no longer significant enough to require employment of defensive counter measures and/or tactical phase of mission end	er measures and/or	tactical phase of mission end	Mission objectives/priorities, tactical situation, weather, terrain, threat activity and location, stage of mission
Ending Actions: Stop	Ending Actions: Stop employing defensive counter measures Resume current mission tasks			
OUTPUT/BEHAVIOUR	/JOUR	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	DCESS
Voice: 0 None		Voice:	0 None	
Psychomotor: 1 2 Difficu	1 2 Difficult but familiar	Psychomotor:	4 Spatial encoding	
Memory: I Comm	I Commit to memory (LTM and STM)	Memory:	5 Memorization	
External Influenced Varial	External Influenced Variables HOTAS, DEWS, Link-16 display, aucraft position, altitude, attitude, heading, speed and g	ıdc, headıng, speed	and g	
Output Interface: HOTAS,	Output Interface: HOTAS, HUD, DECM Suite, LINK-16, HSD, Aircraft Controls, Throttles			
INPUT/SENSATION	<u>I I ON</u>	COGNITI	COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Vision: 1 2 Patter	1 2 Pattern, spatial relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	attern recognition
Audition: 1 Tone	Tone or simple auditory signal	Audition:	1 Automatised, highly learned perception	ed perception
Kinesthetic: 11 Sumpl	Simple stimulus	Kinesthetic:	1 Automatised, highly learned perception	ed perception
Memory: 24 Sema	2 4 Semantically coded	Memory:	3 Verbal decoding	
Internal Influenced Variables	les Belief that defensive countermeasures have been employed to effectively counter all significant threats encountered	ctively counter all s	agnificant threats encountered	

		Annex I - CF18 Air to Gro	und PC1	8 Air to Ground PCT Goal Analysis Results	lesults
IP Number 7763(a)	() Goal:	that RMD is properly executed to ensure survivability against surface-to-air threats		Goal ID: 7.7 6 3(a)	Source Goal: 7.7 6 3(a)
Using all information av	allable at the tin	Using all information available at the time the pilot will try and determine the type/azimuth/range/status of the		Operator: Pilot	Completion Time: 60
radar that is illuminating	threat radar at h	radar that is illuminating his RWR. Assuming the surface-to-air threat is of a critical nature, the pilot will turn connectually to also the threat radar at hig 2 or 0 of both receiver while descending and deal or not of the wil	-	Priority: ¹ Allow	Allowable Delay (K): Difficulty (D)
make use of terrain masl	king if practical	aggressively to prace the function and at this 2 or 7 octoors position while coscitating and upproving chart, the will make use of terrain masking if practical. He will ensure, using his HSD and HUD, that he maintains the energy	3	Interruptable: No	Sheddable: No
radar signal on his wing missiles He will continu	line, and that hi ie to use chaff ai	radar signal on his wing line, and that his on-board jammer is working to defeat the host radar and any inbound missiles He will continue to use chaff and begin a visual lookout If missiles are visually sighted and considered a		Resumable: Not Applicable	Shed If Late: Not Applicable
threat, a visual missile defence is executed	lefence is execu	cd	Fe	Feeds Back to Higher Level Goal	Goal No
Auditory Category:		1 Tone or Simple Auditory Sign			KNOWLEDGE
External Cue:	le: No				Declarative:
Cognitive Category:		5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops	level ops		Aircraft operating procedures, standard operating procedures, classified aircraft operating procedures, enemy electronic order of
Initiating Conditions:		Surface-to-air radar missile launch on formation aircraft is detected using on board systems	oard systems		battle, tactics, intelligence reports
Initiating Action.	 Visually refe 	Initiating Actions: Visually reference DEWS/tactical information on HSD Decide on priority/type	of radar missile	Decide on priority/type of radar missile defence to be carried out (terr	Situational:
Fuding Condition	s. Missile no le				Aircraft altitude/airspeed, aircraft configuration, status of defensive
Ending Action	s. Check for fc	Ending Actions: Check for follow on missile launches Regain formation mutual support and visi	ual lookout Res	mutual support and visual lookout Resume current mission tasks	countermeasures, tactical situation, risk of follow on engagement by other enemy threats
<u>OUTPUT/B</u>	OUTPUT/BEHAVIOUR	21	COGNITIV	COGNITIVE/PERCEPTUAL PROCESS	CESS
Voice: 0	0 None		Voice:	0 None	
Psychomotor: 12	1 2 Difficult but familiar		Psychomotor:	4 Spatial encoding	
Memory:	l Commit to me	1 Commit to memory (LTM and STM)	Memory:	5 Mcmorization	
External Influenced	Variables	External Influenced Variables HOTAS, DEWS status, aircraft position, altitude, attitude, heading, speed and g	speed and g		
Output Interface:	HOTAS, HUD,	Output Interface: HOTAS, HUD, DEWS, LINK-16, RWR, HSD, Ancraft Controls, Throttles			
INPUT/SI	INPUT/SENSATION		COGNIT	COGNITIVE/PERCEPTUAL PROCESS	LOCESS
Vision: 13	2 Pattern, spatı	1 2 Pattern, spattal relatioship, tracking, graphic displays	Vision:	4 Spatial encoding, visual pattern recognition	attern recognition
Audition:	1 Tone or simp	Tone or simple auditory signal	Audition:	I Automatised, highly learned perception	cd perception
Kinesthetic: 1	1 1 Simple stimulus		Kinesthetic:	I Automatised, highly learned perception	cd perception
Memory: 2	2 5 Complex operation	ration	Memory:	5 Recall	
Internal Influenced Variables		Belief that surface-to-air RMD has been effectively carried out, and all correlated radar threats have been defeated	all correlated rae	dar threats have been defcated	
Input Interface: V1	sually confirmir	Input Interface: Visually confirming that a sufficient miss distance is created prior to missile warhead detonation occurs, lack of aircraft damage	detonation occur	s, lack of aırcraft damage	

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	Annex I - CF18 Air to Groun	Air to Ground PCT Goal Analysis Results	s Results
IP Number 7763(b) Goal:	 that IRMD is properly executed to ensure survivability against surface- to-air threats 	Goal ID: 7763(b)	Source Goal: 7763(b)
Description: After sighting the missile launch, the docs, he will manoeuver hard to place throttles and begin employing IRCM 3-5 seconds prior to missile intercept missile and begin deploying flares at missile's warhead detonates	Description: After sighting the missile launch, the pilot will assess whether or not it poses a threat to hun. If he determines it does, he will manoeuver hard to place the missile on his wing line. As he rolls out of the turn he will reduce his throttles and begin employing IRCM He will also deploy flares from his ALE-47 as per SOPs. With approximately 3-5 seconds prior to missile intercept the pilot will carry out a visual 3-D barrel roll manoeuver around the inbound missile and begin deploying flares at a higher rate, in order to ensure a significant miss distance occurs before the missile's warhead detonates	Operator: Pilot Iy Priority: ¹ Interruptable: No Resumable: Not Applic Feeds Back to Hicher I	Completion Time: 60 Allowable Delay (K): Difficulty (D) Sheddable: No able Shed If Late: Not Applicable
Auditory Category: 0 None External Cue: Not Am) None Not Amritable	D	<u>KNOWLEDGE</u> Declarative:
5 Uncor	5 Memorization/recall, calculation, estimation, deduction, reasoning, high level ops Uncorrelated missile launch is visually sighted with no RWR indications	sdo	Ancraft operating procedures, standard operating procedures, classified ancraft operating procedures, enemy electronic order of battle, tactics, intelligence reports
Initiating Actions: Perform Ending Conditions: Missule 1 Ending Actions: Check fi	Initiating Actions: Perform hard turn to place missile on wing line using visual references Ending Conditions: Missile no longer poses a significant threat to aircraft/formation Ending Actions: Check for follow on missile launches Regain formation mutual support and visual lookout Resume current mission tasks	okout Resume current mission tasks	Situational: Aircraft alttude/airspeed, aircraft configuration, status of defensive countermeasures, proximity of missile when sighted, tactical situation, risk of follow on engagement by other enemy threats
OUTPUT/BEHAVIOUR		COGNITIVE/PERCEPTUAL PROCESS	ROCESS
Voice: 0 None		Voice: 0 Nonc	
Psychomotor:1 2 Difficult but familiarMemory:1 Commit to memory (Psyc LTM and STM)	Psychomotor: 4 Spatial encoding Memory: 5 Memorization	
External Influenced Variable: Output Interface: HOTAS, HU	External Influenced Variables HOTAS, DEWS (flares), arrcraft position, altitude, attitude, heading, speed and g Output Interface: HOTAS, HUD, ALE-47, LINK-16, Aireraft Controls, Throttles	sed and g	
INPUT/SENSATION	al relatioship, tracking, graphic displays	COGNITIVE/PERCEPTUAL PROCESS Vision: 4 Spatial encoding, visual pattern recognition	, PROCESS tal pattern recognition
-			carned perception
Kinesthetic: 1 1 Simple stimulus		Kinesthetic: 1 Automattsed, highly learned perception	learned perception
Memory: 2.5 Complex	E E	Memory: 5 Recall	
Internal Influenced Variables Input Interface: Visually confirm	Belief that surface-to-air IRMD has been suc ning that a sufficient miss distance is created pr	cessfully carried out, and all significant if threats have been defea for to missile warhead defonation occurs, lack of aircraft damage	çq
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Annex I - CF18 Air to Grou	8 Air to Ground PCT Goal Analysis Results	alysis Results
IP Number 7 7 6 3(c) Goal: that air to air missic defence is properly executed to ensure survivability against air-to-air threats	ulity Goal ID: 7763(c)	c) Source Goal: 7525(e)
Description: Employ defensive BFM manocuvres to negate enemy attack Assess bandit reposition and perform last ditch	Operator: Pilot	Completion Time:
manoeuvring If unsuccessful, manocuvre the aircraft into a series of Guns defence and jinks	Priority: 1	Allowable Delay (K): Difficulty (D)
	Interruptable:	No Sheddable: No
	Resumable: Not Applicable	t Applicable Shed If Late: Not Applicable
	Feeds Back to H	Feeds Back to Higher Level Goal No
Auditory Category: 1 Tone or Simple Auditory Sign		KNOWLEDGE
External Cue: No		Declarative:
Cognitive Category: 5 Memonzation/recall, calculation, cstimation, deduction, reasoning, high level ops	vcl ops	Aucraft operating procedures, standard operating procedures, elsestified aucraft operating procedures, enemy electronic order of
Initiating Conditions: Arr-to-arr radar missile launch on formation aircraft is detected using on board systems	stems	battle, tactics, mitelligence reports
Initiating Actions: Visually reference DEWS/ractical information on HSD Decide on priority/type of	Decide on priority/type of radar missile defence to be carried out (terr	ned out (terr Situational:
Ending Actions: Check for follow on missile launches Monitor Enemy aircraft Regain formation mutual support and visual lookout Resume current mission tasks	mutual support and visual look	countermeasures, tactical situation, risk of follow on engagement by out Resume other enemy threats
OUTPUT/BEHAVIOUR	COGNITIVE/PERCEPTUAL PROCESS	rual process
Voice: 0 None	Voice: 0 Nonc	
Psychomotor: 1 2 Difficult but familiar Psy	Psychomotor: ⁴ Spatial cncoding	oding
Memory: 1 Commit to memory (LTM and STM)	Memory: 5 Memonzation	uo
External Influenced Variables HOTAS, DEWS status, atteraft position, altitude, attitude, heading, speed and g Enemy aircraft position	seed and g Enemy aurcraft posi	iton
Output Interface: HOTAS, HUD, DEWS, LINK-16, RWR, HSD, Aircraft Controls, Throttles		
INPUT/SENSATION	COGNITIVE/PERCEPTUAL PROCESS	PTUAL PROCESS
Vision: 1 2 Pattern, spattal relatioship, tracking, graphic displays	Vision: 4 Spatral end	Spatial encoding, visual pattern recognition
Audition: 1 Tone or simple auditory signal	Audition: 1 Automatis	1 Automatised, highly learned perception
Kinesthetic: 1 1 Sumple stimulus K	Kinesthetic: 1 Automatis	Automatised, highly learned perception
Memory: 2.5 Complex operation	Memory: 5 Recall	
Internal Influenced Variables Belief that air-to-air missic has been effectively carried out, and all correlated air to air threats have been defeated	rrelated air to air threats have be	en defeated
Input Interface: Visually confirming that a sufficient miss distance is created prior to missile warhead detonation occurs, lack of aircraft damage	tonation occurs, lack of aircraft	damage

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Annex I - CF18 Air to Ground PCT Goal Analysis Results	() Goal: that external stores are jettisoned Goal ID: 7 7 6 3(d) Source Goal: 7 7 3 6(1)	Description: Description: Plot Plot Plot Plot Plot Description Completion Time: The plot reaches down with his left hand and presses the Emergency Jettison Button to Jettison all external stores. If a more immediate action is required and the plot requires to jettison all external stores, he external stores up with his left hand and presses the Emergency Jettison Button to Jettison all external stores. If a more immediate action is required and the plot requires to jettison all external stores. If a more immediate action is required and the plot requires to jettison all external stores. Priority: 5 Allowable Delay (K): Difficulty (D) reaches up with his left hand and presses the Emergency Jettison Button to Jettison all external stores. If a more immediate action is required and the plotes of	 y: 1 Tone or Simple Auditory Sign k.NOWLEDGE ii No Declarative: automatized, highly learned (easy to do for a trained person) 		Initiating Actions: External Stores Jettison is programmed and button is depressed Initiating Actions: External Stores are jettisoned Ending Actions: Stop attending to goal	EHAVIOUR One	I Sumple Psychomotor: 1 Automatised, highly learned I Commit to memory (LTM and STM) Memory: 5 Memorration	Variables Aırcraft stores configuration Aırcraft position, altitude, attitude, heading, speed and g DDI (stores page) Jettison Panel	I Text, Dial Reading Vision: 3 Verbal encoding	D None Audition: 0 None 1 Simple stimulus Kinesthetic: 1 Automatiscd, highly learned perception 1 Accessible, familiar Memory: 1 Automatised
		Description: The pilot reaches down with his left hand and external stores. If a more immediate action is reaches up with his left hand and presses the l	Auditory Category: 1 Tonc or Su External Cue: No Cognitive Category: 1 Automatiz	Initiating Conditions: External stores jettison is required	Initiating Actions: External Stores Jettison is pro Ending Conditions: External Stores are jettisoned Ending Actions: Stop attending to goal	OUTPUT/BEHAVIOUR Voice: 0 None	Psychomotor: 1 1 Sumple Memory: 1 Commut to memory	External Influenced Variables Aurcraft stores or Output Interface: DDI (stores page) Jettison Panel	INPUT/SENSATION Vision: 1 1 Text, Dial Reading	Audition:0NoneKinesthetic:1Simple stimulusMemory:21Accessible, familiar

Internal Influenced Variables Belief that stores have been jettisoned

Input Interface: DDI (stores page) Jettison Panel

DOCUMENT CONTROL DATA SHEET									
1a PERFORMING AGENCY	2. SECURITY CLASSIFICATION								
The HFE Group; 220 Laurier Ave West,	UNCLASSIFIED Unlimited distribution -								
1b PUBLISHING AGENCY									
DCIEM									
3 TITLE									
(U) System Analysis Report Huma Operations	an Factors Engineering System An	alysis of CF18A Air to Ground							
4 AUTHORS									
Mike Wellwood Nadine Wellwood	d Dıdier Toussaint								
5. DATE OF PUBLICATION	6. NO OF PAGES								
June 1	277								
7. DESCRIPTIVE NOTES									
8. SPONSORING/MONITORING/CONT Sponsoring Agency [.] Monitoring Agency [.] Contracting Agency Tasking Agency	RACTING/TASKING AGENCY								
9 ORIGINATORS DOCUMENT NO	10 CONTRACT GRANT AND/OR	11. OTHER DOCUMENT NOS.							
Contract Report CR 2001-072	PROJECT NO W7711-007675								
12. DOCUMENT RELEASABILITY									
	Unlimited distribution								
13 DOCUMENT ANNOUNCEMENT	Unlimited announcement								

14 ABSTRACT

(U) The Directorate of Aerospace Requirements (DAR 5) is in the process of upgrading the CF-18A to maintain its technical currency over the next 20 years. Part of this upgrade will be the inclusion of a Helmet Mounted Display (HMD) with a Night Vision Imaging System (NVIS) capability. The Defence and Civil Institute of Environmental Medicine (DCIEM) has undertaken an investigation of HMD and NVIS technologies in order to provide DAR with advice on human factors issues that may arise from their use in the CF-18A. The investigation will focus on the Air to Ground role of the CF-18A as this is the most likely role in North Atlantic Treaty Organization (NATO) and coalition activities. The Air to Ground role of the CF-18A also presents a high cognitive demand on the skills and abilities of the pilot. This report is the second of two Human Factors Engineering (HFE) reports prepared for DCIEM in support of DAR 5. The first report is a Mission Analysis Report of CF18 Air to Ground Operations and should be read in conjunction with this report. This report provides the detailed results of an HFE study of the employment of the CF-18A in an operational Air to Ground environment. The analysis was conducted without the inclusion of the HMD in order to provide a baseline for assessing the future impact of HMD and NVIS procurements on the modernized fighter.

This report includes a Goal Decomposition, Goal Allocation, Operation Sequence Diagrams, Critical Goal Analysis and a Perceptual Control Theory (PCT) based Information Flow and Processing Analysis. The results of the HFE Analysis will be used to assess the impact of HMD and NVG technologies and the flow of information in the cockpit of the Modernized CF-18A.

15 KEYWORDS, DESCRIPTORS or IDENTIFIERS

(U) F18; CF18A; air to ground

516196 CA011642