



IDENTIFICATION OF ADVANCED TECHNOLOGY CREW STATION DECISION POINTS AND INFORMATION REQUIREMENTS

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19 ABSTRACT (Continue on reverse if necessary and identify by block number) The Advanced Technology Crew Station (ATCS) program is producing an integrated, pilot-centered aircraft design methodology. This methodology mandates that aircraft design specifications be driven by mission-related, pilot information requirements. This report provides the pilot information requirements for advanced fighter/attack aircraft (year 2005+) missions (combat air patrol, deck launched intercept, and strike). The procedures employed identified decision points in mission task analyses and subsequently the information needed by the pilot to make the decisions. Also, a pilot cognitive workload correlate to decision points is discussed.					
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ABBREVIATIONS, ACRONYMS AND UNITS

AAAM	ADVANCED AIR TO AIR MISSILE
AAWC	AIR TO AIR WARFARE COMMANDER/CENTER
ABCCC	AIRBORNE COMMAND, CONTROL AND COMMUNICATION
AEW	AIRBORNE EARLY WARNING
AGL	ABOVE GROUND LEVEL
ALT	ALTITUDE
AMRAAM	ADVANCED MEDIUM RANGE AIR TO AIR MISSILE
AOA	ANGLE OF ATTACK
ARM	ANTI-RADIATION MISSILE
ASM	ANTI-SHIP MISSILE
ASRAAM	ADVANCED SHORT RANGE AIR TO AIR MISSILE
ATC	AIR TRAFFIC CONTROL/AUTO THROTTLE CONTROL
BRC	BASE RECOVERY COURSE (OF A CV)
BUSTER	PROCEED AT HIGHEST POSSIBLE SPEED
C: CHARLIE	"LAND NOW" SIGNAL GIVEN AT CV
CAP	COMBAT AIR PATROL
CAS	CALIBRATED AIR SPEED
CAT	CATAPULT
CCA	CARRIER CONTROLLED APPROACH
CCIP	CONSTANTLY COMPUTED IMPACT POINT
CCRP	CONSTANTLY COMPUTED RELEASE POINT
CIT	COMBINED INTERROGATOR/TRANSPONDER
COMM	COMMUNICATION
CV	AIRCRAFT CARRIER
D/L	DATA LINK
D: DELTA	"DELAY LANDING" SIGNAL GIVEN AT CV
D20	"DELTA TWENTY" EXPECT LANDING DELAY OF TWENTY MINUTES
ECM	ELECTRONIC COUNTER MEASURES
ELINT	ELECTRONIC INTELLIGENCE
EMCON	EMISSION CONTROL
ET	ELAPSED TIME
ETA	ESTIMATED TIME OF ARRIVAL
EW	ELECTRONIC WARFARE
FLOT	FORWARD LINE OF TROOPS
FOR	FIELD OF REGARD
FOV	FIELD OF VIEW

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G	A UNIT OF ACCELERATION EQUAL TO ONE EARTH NORMAL ACCELERATION
GND	GROUND
GPS	GLOBAL POSITIONING SYSTEM
GS	GROUND SPEED
HDG	HEADING
HUD	HEADS-UP DISPLAY
HVU	HIGH VALUE UNIT
IAS	INDICATED AIR SPEED
IAW	IN ACCORDANCE WITH
ID	IDENTIFICATION
ILLUM	ILLUMINATION
INS	INERTIAL NAVIGATION SYSTEM
IR	INFRA-RED
I ² R	IMAGING INFRA-RED
LAT/LONG	LATITUDE/LONGITUDE
LPI	LOW PROBABILITY OF INTERCEPT
LSO	LANDING SIGNAL OFFICIER
MAX	MAXIMUM POWER/FULL AFTERBURNER
MIL	MILITARY RATED POWER/FULL THROTTLE WITHOUT AFTERBURNER
mil	A UNIT OF ANGULAR MEASUREMENT EQUAL TO 1/6400 OF A REVOLUTION
MSL	MEAN SEA LEVEL
NAV	NAVIGATION
NCTR	NON-COOPERATIVE TARGET RECOGNITION
PB	PULL BACK (MODE OF THE HARM)
PELTS	PASSIVE EMITTER LOCATING/TARGETING SYSTEM
PNCTR	PASSIVE NON-COOPERATIVE TARGET RECOGNITION
P _k	PROBABILITY OF KILL
P _s	PROBABILITY OF SURVIVAL
RCS	RADAR CROSS SECTION
RF	RADIO FREQUENCY
ROE	RULES OF ENGAGEMENT
R _{max} /seek	MAXIMUM RANGE OF A MISSILE DUE TO SEEKER HEAD LIMITATIONS
SAM	SURFACE TO AIR MISSILE
SATCOM	SATELLITE COMMUNICATIONS

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SEAD	SUPPRESSION OF ENEMY AIR DEFENSES
SIGINT	SIGNAL INTELLIGENCE
SP	SELF PROTECT (MODE OF THE HARM)
TACAN	TACTICAL AIR NAVIGATION
TAS	TRUE AIR SPEED
TEMP	TEMPERATURE
TMDS	THREAT MISSILE DETECTION SYSTEM
TOO	TARGET OF OPPORTUNITY
TOT	TIME ON TARGET
TRN	TERRAIN REFERENCED NAVIGATION
TTG	TIME TO GO
UTM	UNIVERSAL TRANSVERSE MERCATOR GRID REFERENCE
V _C	CLOSING VELOCITY
VL	VICTOR LIMA (GEOGRAPHICAL CENTROID REFERENCE POINT FOR THE ANTI-AIR GRID)
WCS	WEAPON CONTROL SYSTEM
WRL	WEAPONS RELEASE LINE
X, Y, Z	POSITION COORDINATES ALONG DIMENSIONAL AXES X, Y AND Z

INTRODUCTION

The **Advanced Technology Crew Station (ATCS)** is a Naval Air Development Center program to develop an integrated (across the various relevant aircraft design disciplines), pilot-centered aircraft design methodology and produce advanced crew station concepts. The focus on pilot requirements is a departure from current aircraft design philosophies which stipulate the airframe specifications (e.g., radar cross section, ordnance capacity, etc.) as the primary development driver with the pilot being "made to fit" into the system. ATCS, conversely, places priority on the pilot-vehicle interface, developing an optimal crew station that is integrated with other aircraft components to meet system objectives.

To develop the methodology and crew station concepts, the program will design a year 2005 plus carrier-based fighter/attack crew station. Ensuring the pilot-vehicle interface is the basic consideration in design theory and tradeoffs, the first steps in the methodology are to create appropriate mission scenarios (combat air patrol, deck launched intercept and strike) and subsequently determine the pilot information requirements for each mission. The pilot information requirements and mission scenarios will, in turn, be used by all the ATCS technologies to establish performance requirements for the crew station design.

This report details the procedures developed and the results obtained during the ATCS pilot information requirements analysis. The mission scenarios are published within a separate classified report (1).

TECHNICAL APPROACH

In order to ascertain what information the pilot needs to successfully accomplish the different missions, a variation of the Saleh, Thomas and Boylan method (2) was developed in which significant aircrew decision points are determined and then the information needed to make those decisions is considered. The guiding assumption is that all pilot information that is requisite for the specific ATCS missions at the level of detail considered is inclusive in the information required at the decision points - that is, any information required at the non-decision points is a subset of the information set generated at the decision points (figure 1). (This is especially salient

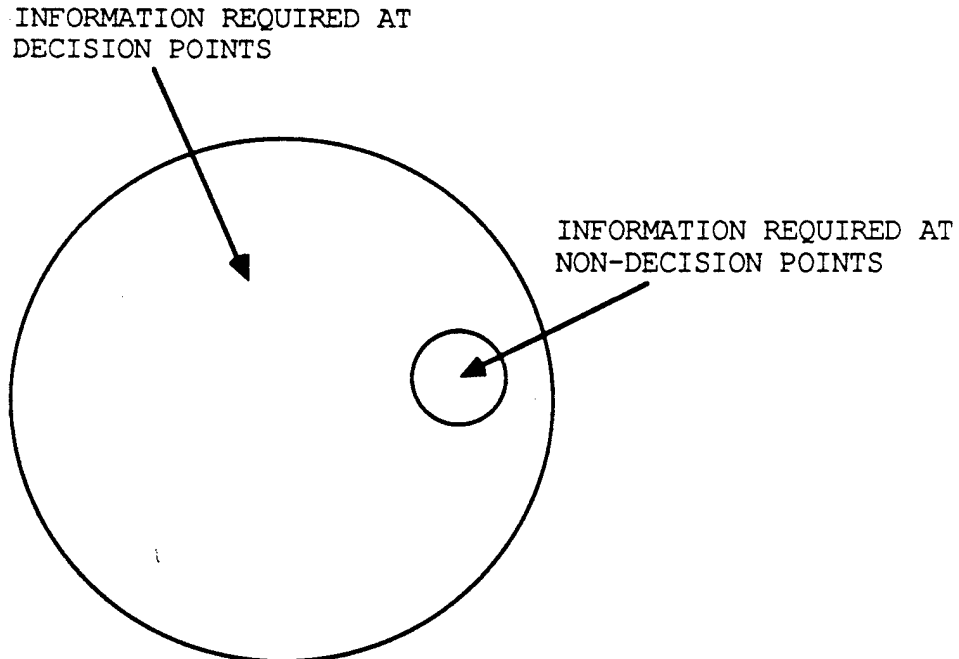


figure 1

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at the configuration-free level since procedures can not be stipulated - see below.)

Decision points are those tasks which compel the pilot to examine the situation and decide on a course of action. This contrasts with non-decision points which are those tasks that call on the pilot to make a learned, procedural response. Therefore, the first step in determining pilot information requirements is conducting task analyses of representative mission scenarios to delineate decision points. The ATCS program, initially, advocates a technology-free design. This means that to the greatest extent possible specific technologies are not dictated to allow the design to remain open-ended and capable of incorporating future concepts (the limitation is that in creating germane mission scenarios some aircraft system performance parameters are essential, e.g., a scenario must consider sensor suite capabilities that are technology-dependent). The difficulty lies in acquiring the information the pilot needs without establishing a relationship between the pilot and fixed aircraft systems. The solution is a high level program which, by necessity, excludes tasking at all but the grossest levels (i.e., no switchology, defined system procedures, etc.) in the context of generic systems.

To determine tasks: mission scenarios are broken into logical demarcations called phases (e.g., PRE-FLIGHT, TAKE-OFF, CLIMB, CRUISE OUT, etc.) and the phases broken into time-ordered segments. Each phase (airborne) contains an AVIATE, NAVIGATE and COMMUNICATE segment (common categories of pilot tasks) in that order and priority, interspersed with other segments unique to the particular phase. For example, the DECK LAUNCHED INTERCEPT mission's DASH OUT phase contains the segments: AVIATE, RESPONSE TO THREAT, COORDINATED SENSOR ACTIVITIES, PRELIMINARY RAID

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ASSESSMENT, NAVIGATE and COMMUNICATE. Each segment is comprised of the tasks needed to perform the segment function within the scope of the particular mission phase or tasks related chronologically to the segment. The DASH OUT phase (3.0) AVIATE segment (3.1) is defined by the pilot tasks (3.1.1 - 3.1.10) in figure 2, an example of the task analysis documentation format.

DECK LAUNCHED INTERCEPT

	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
3.0		DASH OUT		
3.1		AVIATE		
3.1.1	YES	CONTROL AIRCRAFT	1	II
3.1.2	YES	SELECT PILOT RELIEF MODE	4	I
3.1.3		MONITOR SYSTEMS STATUS		
3.1.4	YES	ANALYZE GO/NO-GO CRITERIA	4	
3.1.5	YES	ANALYZE TACTICAL SITUATION	2	I
3.1.6		PERFORM COMBAT CHECKLIST		II
3.1.7		CONDUCT WEAPONS STATUS CHECKS		
3.1.8	YES	INTERPRET WEAPONS STATUS REPORTS	3	I
3.1.9		ACTIVATE MISSION RECORDER SYSTEM		
3.1.10	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	3	II

figure 2

Given the primary intent of the ATCS task analyses is location of the decision points, the tasks are considered as discrete events and ordered to optimize mission effectiveness. This procedure of fixing task sequence provides the least ambiguous decision criteria. It is acknowledged that many of the tasks are continuous in nature and/or performed concurrently; however, these factors have little significance on eliciting pilot information requirements. The DECISION REQ'TS column in figure 2 contains a YES if a task constitutes a decision point.

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Decision points were rated 1 - 5 under CRITICALITY (figure 2) with regard to a task shedding philosophy: a decision rated a "5" if the associated task could be shed without jeopardizing mission objectives (including safety of flight) to a "1" if the decision/task is absolutely essential (in other words, a "1" represents a most critical point). For example, in figure 2, task 3.1.1 rates a "1" because controlling the aircraft is vital to the mission at that time. These decision point ratings, related to their respective information requirements, will aid in prioritizing information which must be made available to the pilot during various mission phases.

The DECISION TYPE column in figure 2 classifies the task decision as either:

- (a) TYPE I: To complete the task the pilot must select among a set of known alternatives. He requires the information to make that selection. For example, in SELECT PILOT RELIEF MODE (figure 2, task 3.1.2), the pilot needs specific information to decide upon the correct autopilot option, hence a TYPE I.
- (b) TYPE II: To complete the task the pilot requires information to assess the conditions and then either generate suitable alternatives and make a selection or directly implement a course of action. For example, in CONTROL AIRCRAFT (figure 2, task 3.1.1), the

pilot has no set of predetermined choices, he must act uniquely according to the circumstances. Often, TYPE II decisions require responses which lie on a continuum.

Identification of decision points and types provides a good, preliminary indication of where to apportion decision-aiding and automation resources. Many of the decision points are candidates for aiding in conjunction with automation (each has to be evaluated individually); however, TYPE II decisions, in general, call for more cognitive processing by the pilot than TYPE I decisions and therefore should be limited (converted to TYPE I's), especially during high workload phases (using decision point quantity and type as a cognitive workload correlate is discussed below). Non-decision points, usually requiring recall of memorized procedures, should also be examined for full or partial automation.

The information needed to make the various decisions will provide a convenient starting point from which to allocate functions both for aiding and automation. Figure 3 is an overview of the process for determining mission decision points and their information requirements.

NOTE: This report concerns the elicitation of information requirements prior to system requirements definition or configuration; therefore, implementation of the information into a design is not considered. For example, much of the information required by the pilot will be supplied in the cockpit as a result of

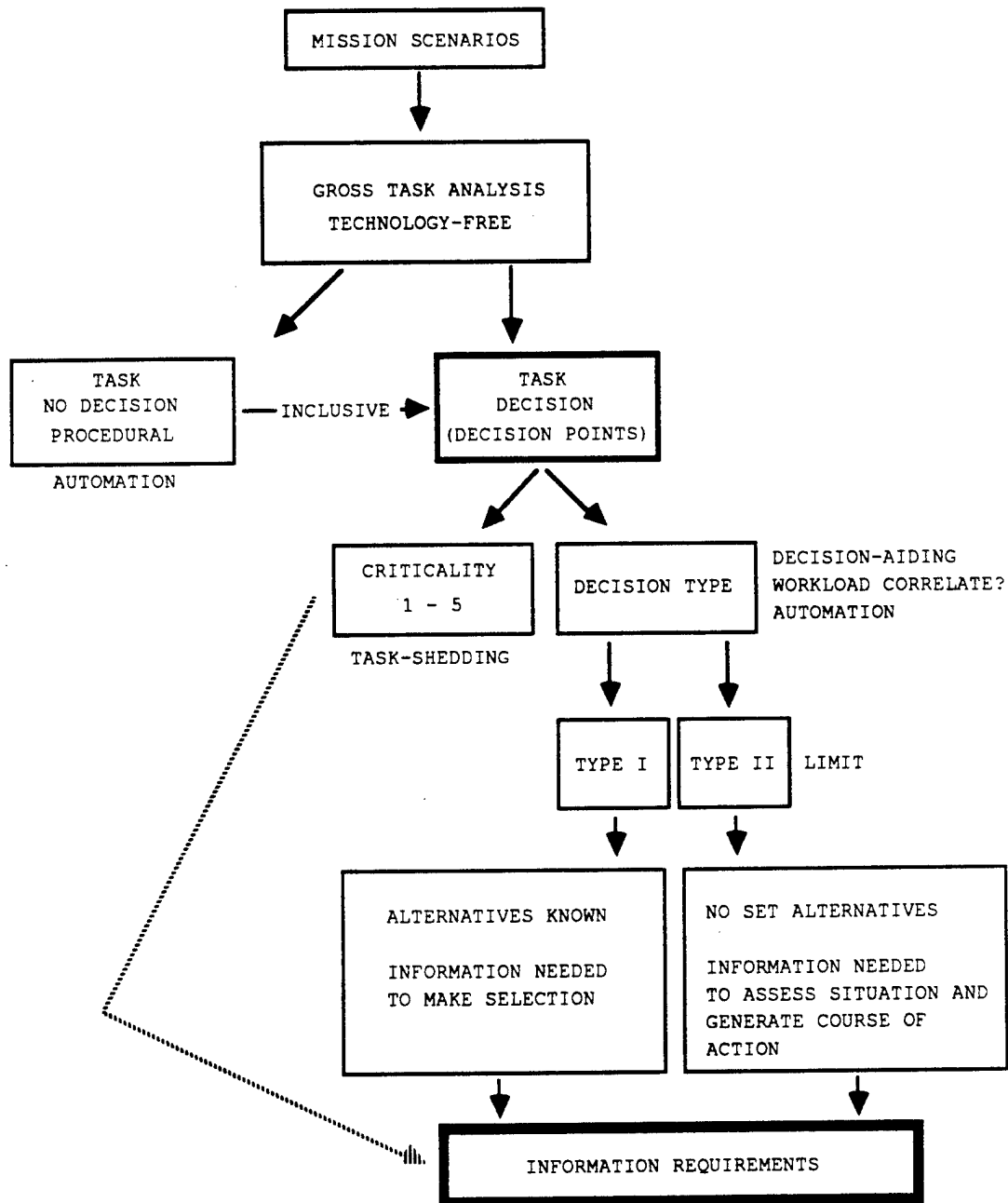


figure 3

prior mission planning; however, as an implementation technology, mission planning is out of the scope of this report.

DATA COLLECTION

Production of mission scenarios and task analyses, identification of decision point type and criticality and enumeration of information requirements were performed by a group of Fleet experienced personnel, operations research analysts and aviation psychologists. This group possesses the requisite expertise in future technologies, scenario development, tactical aircraft operation and human performance to be uniquely qualified to meet ATCS program goals. It is intended that this report be submitted to the Fleet for verification and validation prior to official release. The ATCS decision point/task analyses and the corresponding decision information requirements can be found in appendices A, B and C of this report for combat air patrol, deck launched intercept and strike, respectively.

WORKLOAD CORRELATION

In the decision/information analysis, it was assumed that the amount and type of decision making is correlated with cognitive workload. Given this assumption, identification of mission decision points can provide a prefatory estimate of pilot cognitive workload.

Further, determining decision type (TYPE I or TYPE II) provides a rough, relative gauging of workload for decision tasks. Following the assumption above, a TYPE II decision, which requires problem structuring in addition to TYPE I activities

(choice selection) should be more cognitive loading and intensive (this is supported by information processing theory).

For purposes of comparison, a TYPE II decision is weighted 1.5 times a TYPE I decision. This allows addition of decisions across types and simplifies discriminations of workload in different phases within the same mission as well as across different missions. In figure 4, the number of decisions versus type by phase is shown for the DECK LAUNCHED INTERCEPT mission. Figure 5 shows decision quantities for the same mission after TYPE II's and TYPE I's were combined. Note how the single value improves comprehension of the amount of "workload" per phase. Figures 6 and 7 and figures 8 and 9 present the same data for the COMBAT AIR PATROL and STRIKE missions, respectively.

It must be emphasized that this workload measure is recommended for preliminary investigations. Of course, specific TYPE I - TYPE II comparisons out of context are not very meaningful, but general comparisons across phases provide some indication of how cognitive loadings might vary. Considering decision points with their information requirements yields a more realistic comparison than by type classification. Weighting of information requirements holds promise for producing more exacting decision measures.

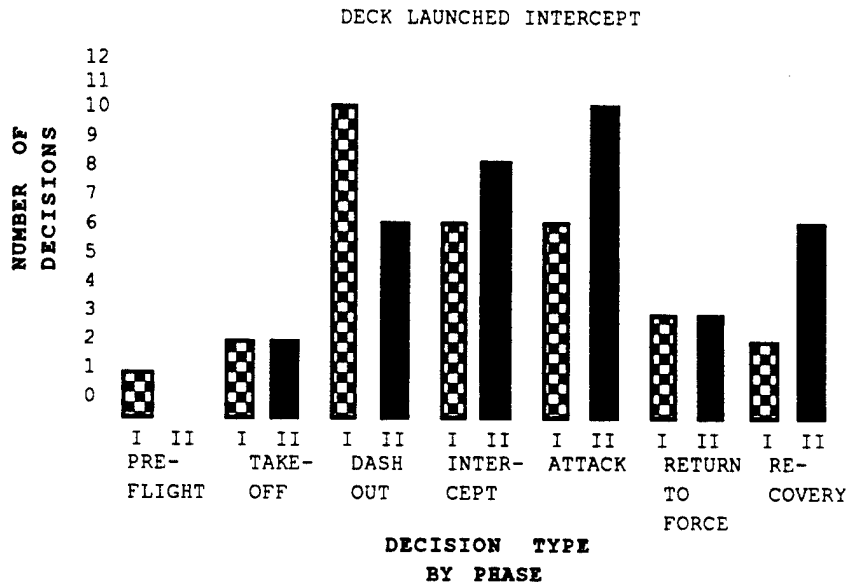


figure 4

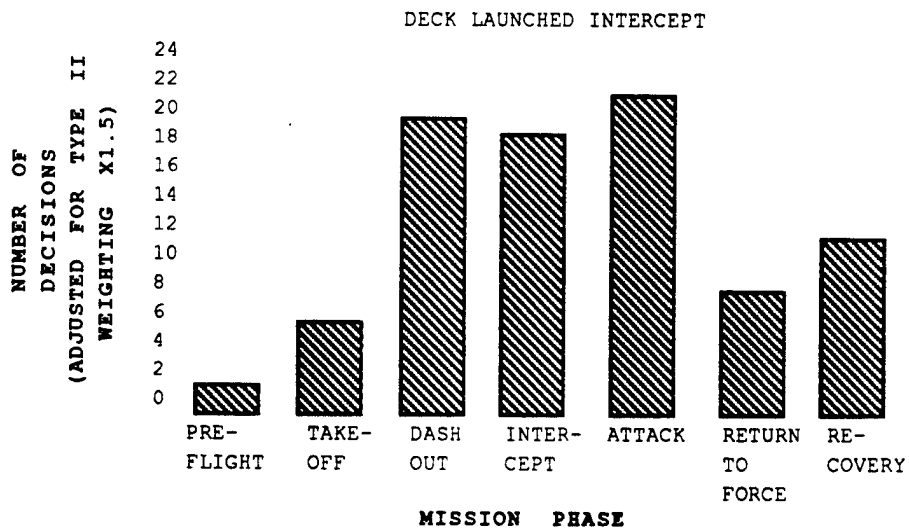


figure 5

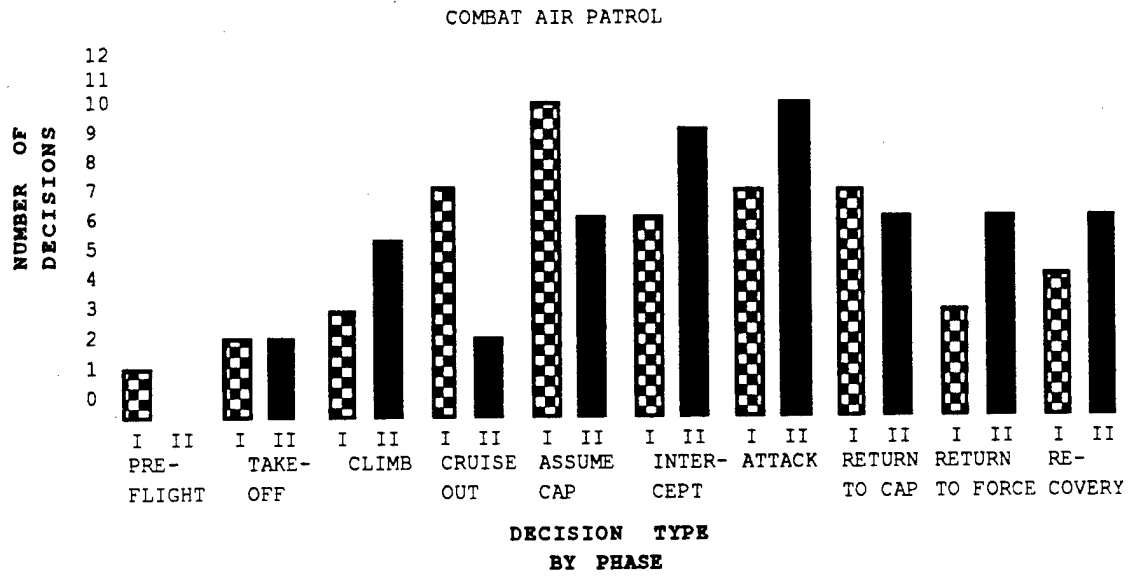


figure 6

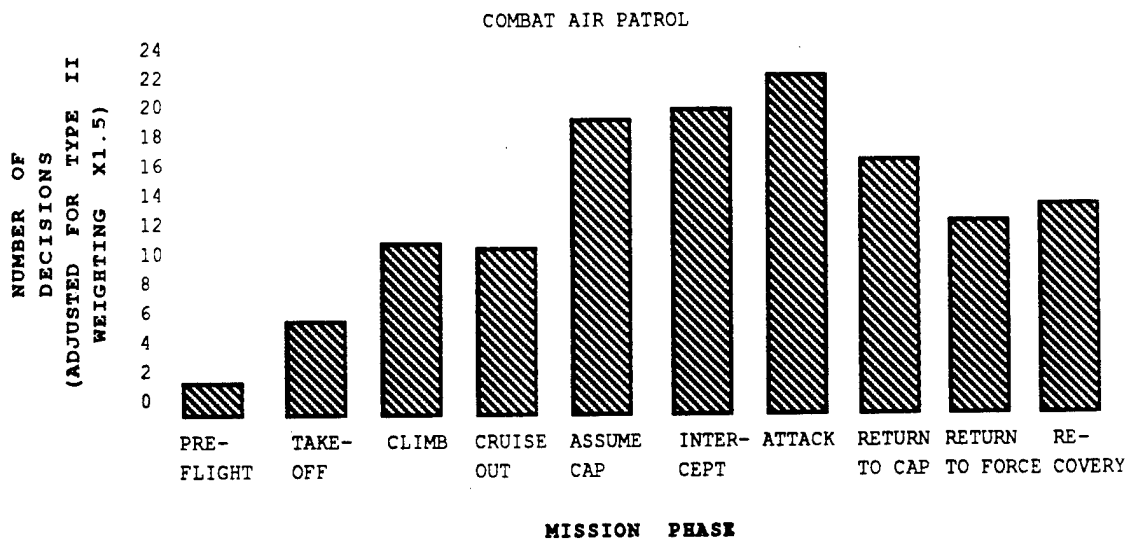


figure 7

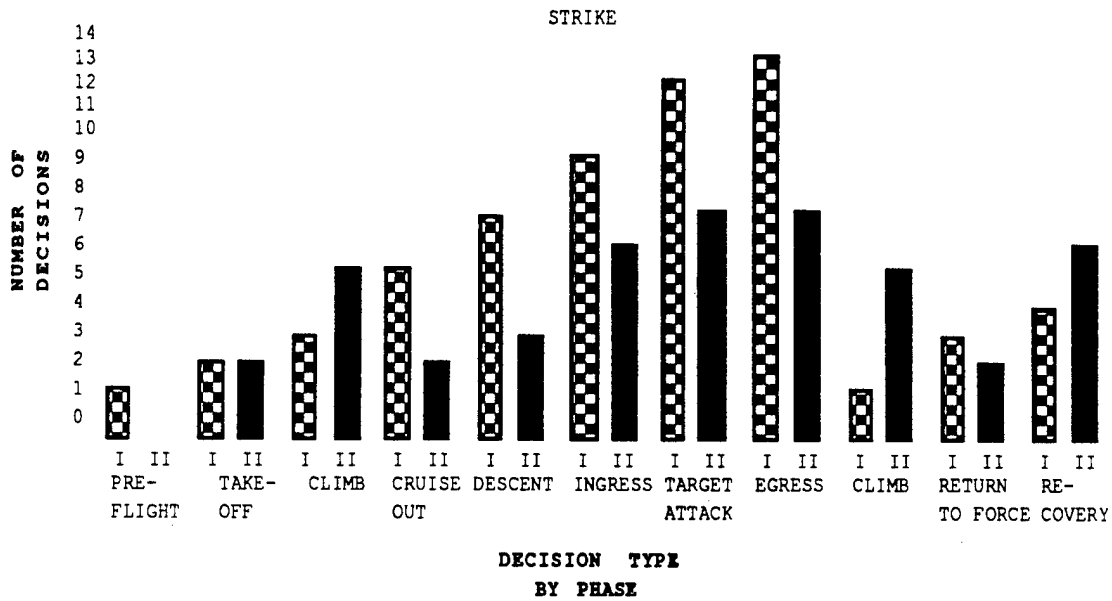


figure 8

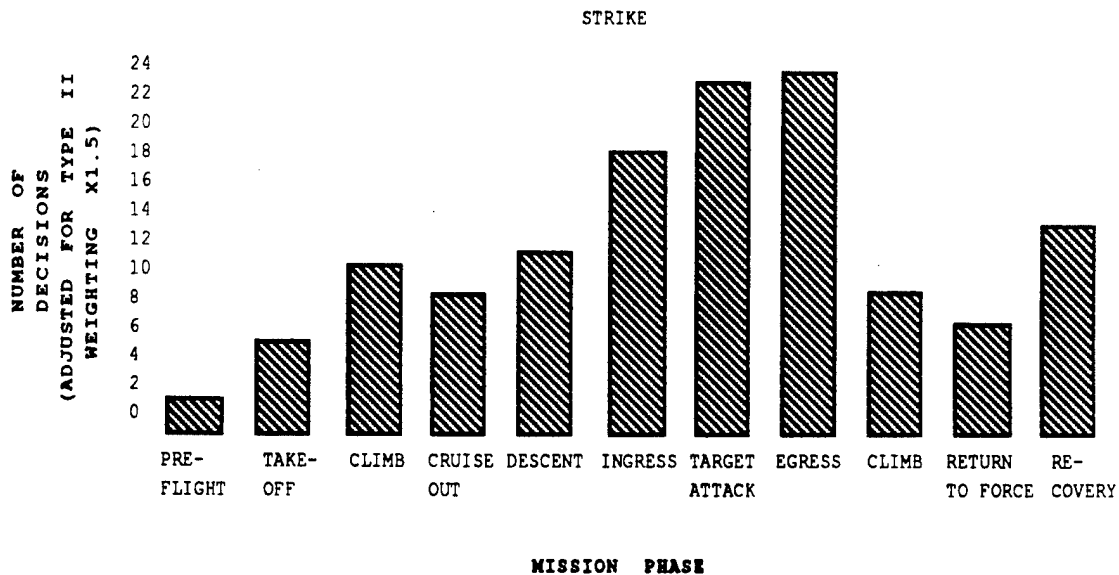


figure 9

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1. Hodorovich, N.D. and D. Cohen. Year 2005 Mission Scenarios for Advanced Technology Crew Stations (U). Naval Air Development Center, 31 August 1989. (Technical Report DRAFT, publication SECRET-NOFORN-WNINTEL).
2. Saleh, J., J.O. Thomas, and R.J. Boylan. Identification of Significant Aircrew Decisions in Navy Attack Aircraft. Naval Weapons Center, January 1980. (Technical Report NWC TP 6117, publication UNCLASSIFIED).

APPENDIX A

COMBAT AIR PATROL

MISSION TASK/DECISION ANALYSES AND INFORMATION REQUIREMENTS

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
1.0		PRE-FLIGHT		
1.1		INSPECTION		
1.1.1		EXTERNAL INSPECTION		
1.1.2		MAN-UP		
1.1.3		COCKPIT CHECKS		
1.2		START-UP		
1.2.1		PERFORM ENGINE START		
1.2.2		PERFORM AVIONICS START/INITIALIZATION		
1.2.3		INSERT PRE-FLIGHT DATA		
1.2.4		PERFORM WEAPONRY INITIALIZATION		
1.2.5		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
1.3		TAXI		
1.3.1		MONITOR SYSTEMS		
1.3.2		TAXI AIRCRAFT		
1.3.3		CHECK AVIONICS		
1.3.4		COMPLY WITH TAXI DIRECTIONS		
1.3.5		RECEIVE FLIGHT CLEARANCE		
1.3.6	YES	SET EMCON	5	1
1.3.7		EXECUTE COMM CHECKS, IAW EMCON		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
2.0		TAKE-OFF		
2.1		ON DECK		
2.1.1		RECEIVE TAKE-OFF CLEARANCE/INSTRUCTIONS		
2.1.2		PERFORM TAKE-OFF CHECKLIST		
2.1.3		VISUAL CHECK OF FLIGHT MEMBER(S) (IF APPLICABLE)		
2.1.4	YES	DETERMINE PREPAREDNESS FOR FLIGHT	1	I
2.2		AVIATE		
2.2.1		INITIATE TAKE-OFF ROLL/PRESS-UP/CAT SHOT		
2.2.2		MONITOR SYSTEMS STATUS		
2.2.3	YES	ESTABLISH AIRCRAFT FLIGHT ATTITUDE/POWER	1	II
2.2.4	YES	ANALYZE GO/NO-GO CRITERIA	2	I
2.2.5		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
2.3		NAVIGATE		
2.3.1		MONITOR NAV SYSTEM		
2.3.2		COMPLY WITH CLEARANCE/INSTRUCTIONS		
2.4		COMMUNICATE		
2.4.1		COMMUNICATE CLEAR INFORMATION WITH CONTROLLING/OTHER PLATFORMS		
2.4.2		COMMUNICATE SECURE INFORMATION WITH CONTROLLING/OTHER PLATFORMS		
2.4.3	YES	SET EMCON	5	I

	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
3.0		CLIMB		
3.1		AVIATE		
3.1.1		ASSUME CLIMB ATTITUDE		
3.1.2	YES	CONTROL AIRCRAFT OPERATION AND FLIGHT	1	II
3.1.3		MONITOR SYSTEMS STATUS		
3.1.4	YES	ANALYZE GO/NO-GO CRITERIA	3	I
3.1.5	YES	SET FORMATION	5	I
3.2		AERIAL REFUELING		
3.2.1		CONFIGURE AIRCRAFT		
3.2.2		PERFORM PLUG-IN		
3.2.3		TAKE FUEL ONBOARD AND MONITOR FUEL STATUS		
3.2.4		MONITOR SYSTEMS STATUS		
3.2.5		MONITOR COMM		
3.2.6		DISENGAGE REFUELING		
3.2.7		RECONFIGURE AIRCRAFT		
3.3		RENDEZVOUS		
3.3.1		INITIATE CLOSURE		
3.3.2	YES	DETERMINE / CONTROL CLOSURE	3	II
3.3.3	YES	DETERMINE / CONTROL BEARING	4	II
3.3.4	YES	DETERMINE / CONTROL ALTITUDE	4	II
3.3.5		EFFECT JOIN-UP		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
3.4	YES	NAVIGATE	5	II
3.4.1		MONITOR POSITION		
3.4.2		MONITOR COURSE		
3.4.3		MONITOR SPEED		
3.4.4		MONITOR ALTITUDE		
3.4.5		COMPUTE ETA		
3.4.6		COMPARE PRESENT STATUS AND ESTIMATES TO MISSION PLAN (TIME, FUEL, etc.)		
3.4.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	5	II
3.5	YES	COMMUNICATE	5	I
3.5.1		COMMUNICATE CLEAR VOICE (CV, WINGMAN, TANKER ACCC, EW, etc.)		
3.5.2		COMMUNICATE SECURE VOICE		
3.5.3		PERFORM D/L COMM		
3.5.4		PERFORM SATCOM		
3.5.5		SET EMCON		
3.5.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
4.0		CRUISE OUT (CAP UNIQUE)		
4.1		AVIATE		
4.1.1	YES	CRUISE/TRIM AIRCRAFT (FLY AT BEST CRUISE SPEED AND ALTITUDE)	1	II
4.1.2	YES	SELECT PILOT RELIEF MODE	4	I
4.1.3		MONITOR SYSTEMS STATUS		
4.1.4	YES	ANALYZE GO/NO-GO CRITERIA	4	I
4.1.5	YES	SET FORMATION	5	I
4.1.6		CONDUCT WEAPONS STATUS CHECK		
4.1.7	YES	INTERPRET WEAPONS STATUS REPORTS	4	I
4.1.8		ACTIVATE THREAT DETECTION SYSTEMS		
4.1.9		MONITOR THREAT DETECTION SYSTEMS		
4.1.10		PERFORM COMBAT CHECKLIST		
4.1.11	YES	SELECT SENSOR MODES	3	I
4.2		NAVIGATE		
4.2.1		MONITOR POSITION		
4.2.2		MONITOR COURSE		
4.2.3		MONITOR SPEED		
4.2.4		MONITOR ALTITUDE		
4.2.5		COMPUTE ETA		
4.2.6		COMPARE PRESENT STATUS AND ESTIMATES TO MISSION PLAN (TIME PLAN AS REQUIRED)		
4.2.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	5	II
4.2.8	YES	DETERMINE ASSIGNED DEFENSIVE GRID POSITION	2	I

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
4.3	YES	COMMUNICATE	5	I
4.3.1		COMMUNICATE CLEAR VOICE		
4.3.2		COMMUNICATE SECURE VOICE		
4.3.3		PERFORM D/L COMM AMONG FRIENDLY UNITS		
4.3.4		SET EMCON STATUS		
4.3.5		PERFORM SATCOM		
4.3.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
5.0		ASSUME CAP		
5.1		AVIATE		
5.1.1	YES	CONTROL AIRCRAFT	1	II
5.1.2	YES	SELECT PILOT RELIEF MODE	4	I
5.1.3		MONITOR SYSTEMS STATUS		
5.1.4	YES	ANALYZE TACTICAL SITUATION	2	II
5.1.5	YES	SET FORMATION	4	I
5.1.6		MONITOR WEAPONS STATUS		
5.1.7		ACTIVATE MISSION RECORDER SYSTEM		
5.1.8	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	4	II
5.2		RESPONSE TO THREAT		
5.2.1		MONITOR THREAT DETECTION SYSTEMS		
5.2.2	YES	DETERMINE THREAT DEGREE	1	I
5.2.3	YES	DETERMINE IMMINENCE OF THREAT	1	I
5.2.4	YES	DETERMINE TO AVOID, SUPPRESS, OR INTERCEPT	2	II
5.2.5		PERFORM THREAT RESPONSE		
5.3		COORDINATED SENSOR ACTIVITIES		
5.3.1	YES	OPERATE SENSORS	2	I
5.3.2		CORRELATE ON-BOARD SENSOR DATA/INFORMATION		
5.3.3		CORRELATE EXTERNAL DATA/INFORMATION WITH ONBOARD DATA/INFORMATION		
5.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	1	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
5.4		PRELIMINARY RAID ASSESSMENT		
5.4.1		PERFORM TARGET SEARCH/DETECTION		
5.4.2	YES	PERFORM TARGET ACQUISITION	2	I
5.4.3	YES	PERFORM TARGET IDENTIFICATION/CLASSIFICATION	3	I
5.5		NAVIGATE		
5.5.1		MONITOR POSITION		
5.5.2		MONITOR COURSE		
5.5.3		MONITOR SPEED		
5.5.4		MONITOR ALTITUDE		
5.5.5		COMPUTE COMBAT PACKAGE		
5.5.6		COMPUTE REMAINING TIME ON STATION		
5.5.7		COMPARE PRESENT STATUS TO PLAN		
5.5.8	YES	ADJUST FLIGHT PLAN, AS REQUIRED	4	II
5.5.9	YES	PERFORM NAV SYSTEM UPDATE	5	I
5.5.10	YES	DETERMINE APPROPRIATE DEFENSIVE GRID POSITION	2	I
5.6		COMMUNICATE		
5.6.1		COMMUNICATE CLEAR VOICE		
5.6.2		COMMUNICATE SECURE VOICE		
5.6.3		PERFORM D/L COMM AMONG FRIENDLIES		
5.6.4	YES	SET EMCON	5	I
5.6.5		PERFORM SATCOM		
5.6.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
6.0		INTERCEPT		
6.1		AVIATE		
6.1.1	YES	CONTROL AIRCRAFT	1	II
6.1.2	YES	SELECT PILOT RELIEF MODE	3	I
6.1.3		ARM WEAPONS		
6.1.4		MONITOR WEAPONS STATUS		
6.1.5		MAINTAIN FORMATION/MUTUAL SUPPORT		
6.1.6		MONITOR SYSTEMS STATUS		
6.1.7	YES	ANALYZE TACTICAL SITUATION	2	II
6.1.8		MONITOR FUEL STATUS		
6.1.9	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	2	II
6.2		RESPONSE TO THREAT		
6.2.1		MONITOR THREAT DETECTION SYSTEMS		
6.2.2	YES	DETERMINE THREAT DEGREE	1	I
6.2.3	YES	DETERMINE IMMINENCE OF THREAT	1	I
6.2.4	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
6.2.5		PERFORM THREAT RESPONSE		
6.3		COORDINATED SENSOR ACTIVITIES		
6.3.1	YES	OPERATE SENSORS	2	I
6.3.2		CORRELATE ON-BOARD SENSOR DATA/ INFORMATION		
6.3.3		CORRELATE EXTERNAL DATA WITH ON-BOARD DATA/INFORMATION		
6.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	1	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
6.4		RAID ASSESSMENT (SORTING)		
6.4.1		PERFORM TARGET SEARCH/DETECTION		
6.4.2		PERFORM TARGET ACQUISITION		
6.4.3		PERFORM TARGET IDENTIFICATION/CLASSIFI- CATION		
6.4.4	YES	ASSESS RAID (POSITION, COUNT, TRACK, INTENT)	1	II
6.4.5	YES	DETERMINE TARGET ASSIGNMENTS	3	II
6.4.6	YES	DETERMINE PRELIMINARY TARGETING	3	I
6.4.7	YES	DETERMINE DYNAMIC GEOMETRY MANEUVERS REQUIRED	2	II
6.4.8		PERFORM DYNAMIC GEOMETRY MANEUVERS		
6.5		NAVIGATE		
6.5.1		MONITOR POSITION		
6.5.2		MONITOR COURSE		
6.5.3		MONITOR SPEED		
6.5.4		MONITOR ALTITUDE		
6.5.5	YES	ADJUST FLIGHT PLAN, AS REQUIRED	3	II
6.6		COMMUNICATE		
6.6.1		COMMUNICATE CLEAR VOICE		
6.6.2		COMMUNICATE SECURE VOICE		
6.6.3		PERFORM D/L COMM W/ FRIENDLIES		
6.6.4	YES	SET EMCON	5	I
6.6.5		PERFORM SATCOM		
6.6.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.0		ATTACK		
7.1		AVIATE		
7.1.1	YES	CONTROL AIRCRAFT	1	II
7.1.2	YES	SELECT PILOT RELIEF MODE	4	I
7.1.3		MAINTAIN MUTUAL SUPPORT, AS REQUIRED		
7.1.4		MONITOR WEAPONS STATUS		
7.1.5	YES	ANALYZE TACTICAL SITUATION	2	II
7.1.6		MONITOR FUEL STATUS		
7.1.7	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	2	II
7.1.8	YES	ANALYZE DISENGAGEMENT CRITERIA	3	II
7.1.9		PERFORM DISENGAGEMENT MANEUVER(S)		
7.2		RESPONSE TO THREAT		
7.2.2		MONITOR THREAT DETECTION SYSTEMS		
7.2.3	YES	DETERMINE THREAT DEGREE	1	I
7.2.4	YES	DETERMINE IMMINENCE OF THREAT	1	I
7.2.5	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
7.2.6		PERFORM THREAT RESPONSE		
7.3		COORDINATED SENSOR ACTIVITIES		
7.3.1	YES	OPERATE SENSORS	2	I
7.3.2		CORRELATE ON-BOARD SENSOR DATA/ INFORMATION		
7.3.3		CORRELATE EXTERNAL DATA WITH ON-BOARD DATA/INFORMATION		
7.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	1	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.4		FINAL TARGETING		
7.4.1	YES	DETERMINE DYNAMIC GEOMETRY MANEUVERS REQUIRED	1	II
7.4.2		PERFORM DYNAMIC GEOMETRY MANEUVERS		
7.4.3		COMPLY WITH TARGETING ASSIGNMENTS		
7.4.4	YES	SELECT WEAPONRY	2	I
7.4.5		OBTAIN CLEARANCE TO FIRE		
7.5		WEAPON DELIVERY		
7.5.1		SELECT WEAPON/WEAPON MODE		
7.5.2	YES	COMMIT WEAPON(S)	1	I
7.5.3		EXECUTE POST-LAUNCH MANEUVER, AS DESIRED		
7.5.4		PROVIDE WEAPON STEERING DATA/ILLUMINATION		
7.6		DAMAGE ASSESSMENT		
7.6.1	YES	DETERMINE TARGET DAMAGE	4	II
7.6.2	YES	ASSESS REATTACK OPTIONS	2	II
7.6.3		EXECUTE REATTACK, AS REQUIRED		
7.7		NAVIGATE		
7.7.1		MONITOR POSITION		
7.7.2		MONITOR COURSE		
7.7.3		MONITOR SPEED		
7.7.4		MONITOR ALTITUDE		
7.7.5	YES	ADJUST FLIGHT PLAN, AS REQUIRED	3	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.8	YES	COMMUNICATE	5	I
7.8.1		COMMUNICATE CLEAR VOICE		
7.8.2		COMMUNICATE SECURE VOICE		
7.8.3		PERFORM D/L COMM W/ FRIENDLIES		
7.8.4		SET EMCON		
7.8.5		PERFORM SATCOM		
7.8.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
8.0		RETURN TO CAP		
8.1		AVIATE		
8.1.1	YES	CONTROL AIRCRAFT OPERATION AND FLIGHT	1	II
8.1.2	YES	SELECT PILOT RELIEF MODE	4	I
8.1.3		PERFORM DISENGAGEMENT MANEUVER (S)		
8.1.4		MONITOR SYSTEMS STATUS		
8.1.5	YES	SET FORMATION	5	I
8.1.6	YES	ANALYZE TACTICAL SITUATION	3	II
8.1.7		MONITOR FUEL STATUS		
8.1.8	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	3	II
8.2		RESPONSE TO THREAT		
8.2.1		MONITOR THREAT DETECTION SYSTEMS		
8.2.2	YES	DETERMINE THREAT DEGREE	1	I
8.2.3	YES	DETERMINE IMMINENCE OF THREAT	1	I
8.2.4	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
8.2.5		PERFORM THREAT RESPONSE		
8.3		COORDINATED SENSOR ACTIVITIES		
8.3.1	YES	OPERATE SENSORS	2	I
8.3.2		CORRELATE ONBOARD SENSOR DATA/INFORMATION		
8.3.3		CORRELATE EXTERNAL DATA WITH ONBOARD DATA/INFORMATION		
8.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	1	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
8.4		NAVIGATE		
8.4.1		MONITOR POSITION		
8.4.2		MONITOR COURSE		
8.4.3		MONITOR SPEED		
8.4.4		MONITOR ALTITUDE		
8.4.5		COMPUTE COMBAT PACKAGE		
8.4.6		COMPUTE REMAINING TIME ON STATION		
8.4.7		COMPARE PRESENT STATUS TO PLAN		
8.4.8	YES	ADJUST FLIGHT PLAN, AS REQUIRED	4	II
8.4.9	YES	PERFORM NAV SYSTEMS UPDATE	5	I
8.4.10	YES	DETERMINE DEFENSIVE GRID POSITION	2	I
8.5		COMMUNICATE		
8.5.1		COMMUNICATE CLEAR VOICE		
8.5.2		COMMUNICATE SECURE VOICE		
8.5.3		PERFORM D/L COMM AMONG FRIENDLIES		
8.5.4	YES	SET EMCON	5	I
8.5.5		PERFORM SATCOM		
8.5.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
9.0		RETURN TO FORCE		
9.1		AVIATE		
9.1.1	YES	CONTROL AIRCRAFT	1	II
9.1.2	YES	SELECT PILOT RELIEF MODE	4	I
9.1.3		MONITOR SYSTEM STATUS		
9.1.4	YES	SET FORMATION	5	I
9.1.5		MONITOR FUEL STATUS		
9.1.6	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	4	II
9.1.7		SAFE WEAPONS		
9.1.8		EXECUTE RETURN TO FORCE PROCEDURES		
9.2		AERIAL REFUELING		
9.2.1		CONFIGURE AIRCRAFT		
9.2.2		PERFORM PLUG-IN		
9.2.3		TAKE FUEL ON-BOARD AND MONITOR FUEL STATUS		
9.2.4		MONITOR SYSTEMS STATUS		
9.2.5		MONITOR COMM		
9.2.6		DISENGAGE REFUELING		
9.2.7		RECONFIGURE AIRCRAFT		
9.3		RENDEZVOUS		
9.3.1		INITIATE CLOSURE		
9.3.2	YES	DETERMINE/CONTROL CLOSURE	3	II
9.3.3	YES	DETERMINE/CONTROL BEARING	4	II
9.3.4	YES	DETERMINE/CONTROL ALTITUDE	4	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
9.3.5		EFFECT JOIN-UP		
9.4		NAVIGATE		
9.4.1		MONITOR POSITION		
9.4.2		MONITOR COURSE		
9.4.3		MONITOR SPEED		
9.4.4		MONITOR ALTITUDE		
9.4.5		COMPUTE ETA		
9.4.6		COMPARE PRESENT STATUS AND ESTIMATES TO PLAN		
9.4.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	5	II
9.5		COMMUNICATE		
9.5.1		COMMUNICATE CLEAR VOICE		
9.5.2		COMMUNICATE SECURE VOICE		
9.5.3		PERFORM D/L COMM AMONG FRIENDLIES		
9.5.4		PERFORM SATCOM		
9.5.5	YES	SET EMCON	5	I
9.5.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
10.0		RECOVERY		
10.1		AVIATE		
10.1.1		PERFORM PENETRATION CHECKLIST		
10.1.2	YES	SELECT PILOT RELIEF MODE	3	I
10.1.3		SAFE WEAPONS		
10.1.4		MONITOR THREAT DETECTION SYSTEMS		
10.1.5	YES	PERFORM AIRCRAFT DESCENT	1	II
10.1.6	YES	SET RECOVERY FORMATION, AS REQUIRED	5	I
10.1.7	YES	INTERPRET MULTI-SENSOR CORRELATION DATA	3	II
10.1.8		MONITOR SYSTEM STATUS		
10.1.9		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
10.1.10	YES	PERFORM FUEL DUMP, AS REQUIRED	4	II
10.1.11	YES	PERFORM APPROACH/PATTERN ENTRY	1	II
10.1.12		CONFIGURE AIRCRAFT FOR LANDING		
10.1.13		PERFORM LANDING CHECKLIST		
10.1.14	YES	PERFORM LANDING	1	II
10.1.15	YES	DETERMINE REQUIREMENT FOR MISSED APPROACH/WAVE-OFF	1	II
10.1.16		PERFORM BOLTER/MISSED APPROACH/WAVE- OFF (AS REQUIRED)		
10.2		NAVIGATE		
10.2.1		MONITOR POSITION		
10.2.2		MONITOR COURSE		
10.2.3		MONITOR SPEED		
10.2.4		MONITOR ALTITUDE		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
10.2.5	YES	COMPLY WITH CLEARANCE/INSTRUCTIONS	3	I
10.3		COMMUNICATE		
10.3.1		COMMUNICATE SECURE VOICE		
10.3.2		COMMUNICATE CLEAR VOICE		
10.3.3		PERFORM D/L COMM AMONG FRIENDLIES		
10.3.4		SET EMCON	5	I
10.3.5		SET CIT MODES AND CODES		
10.4		ON DECK		
10.4.1		TAXI CLEAR		
10.4.2		PARK AIRCRAFT		
10.4.3		PERFORM SHUT DOWN CHECKLIST		
10.4.4		RECORD APPLICABLE DATA		
10.4.5		SECURE AIRCRAFT		

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PHASE: PRE-FLIGHT (1.0)
SEGMENT: TAXI (1.3)
DECISION: Set EMCON (1.3.6)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

PHASE: TAKE-OFF (2.0)
SEGMENT: ON DECK (2.1)
DECISION: Determine preparedness for flight (2.1.4)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. Go
2. Abort
3. Alter standards
4. Delay decision

INFORMATION REQUIREMENTS:

1. ATC clearance/instruction
2. Checklist results
3. System status
4. Flight warnings/cautions/advisories
5. Criticality of flight/mission
6. Flight member status
7. Tanker/support aircraft status
8. Threat condition
9. Launch window (time remaining)
10. Flight member visual check
11. Final checker results
12. Fuel weight board accuracy
13. Catapult officer's readiness/assurance
14. Type catapult shot (i.e., mil/max)
15. Meteorological conditions (present)
16. End speed

PHASE: TAKE-OFF (2.0)
SEGMENT: AVIATE (2.2)
DECISION: Establish Aircraft Flight Attitude/Power (2.2.3)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. End speed
2. Rotation attitude
3. Landing gear position/transition
4. Flap position/transition
5. Fuel transfer initiated/transferring
6. Vertical velocity
7. Altitude (AGL/MSL)
8. Airspeed
9. Heading
10. Standard/non-standard departure (visual)
11. Standard instrument departure
12. Engine performance
13. Hydraulic status
14. Pneumatic status
15. Flight warnings/cautions/advisories
16. Ejection system status
17. External stores integrity
18. Flight control system operability
19. Angle of attack
20. Local barometric pressure
21. Altimeter barometric pressure setting

PHASE: TAKE-OFF (2.0)
SEGMENT: AVIATE (2.2)
DECISION: Analyze GO/NO-GO criteria (2.2.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:

1. Engine performance
2. Flight control system operability
3. System performance
4. External stores integrity
5. Directive instructions
6. Flight warnings/cautions/advisories

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PHASE: TAKE OFF (2.0)
SEGMENT: COMMUNICATE (2.4)
DECISION: Set EMCON (2.4.3)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

PHASE: CLIMB (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Control aircraft operation and flight (3.1.2)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Standard/non-standard departure (visual)
12. Standard instrument departure
13. Flight warnings/cautions/advisories
14. Navigation compliance cues
15. Sideslip
16. Optimum airspeed
17. Optimum vertical velocity
18. Optimum heading
19. Local barometric pressure
20. Altimeter barometric pressure setting
21. Low airspeed cue
22. High angle of attack cue

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PHASE: CLIMB (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Analyze GO/NO-GO Criteria (3.1.4)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:
1. Engine performance
2. Flight control system operability
3. System performance
4. External stores integrity
5. Directive instructions
6. Flight warnings/cautions/advisories

PHASE: CLIMB (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Set formation (3.1.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. No formation required

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

PHASE: CLIMB (3.0)
SEGMENT: RENDEZVOUS (3.3)
DECISION: Determine/control closure (3.3.2)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Desired rate of closure
2. Rate of closure
3. Distance between flight members
4. Disengagement opportunities/options
5. Joiner's indicated airspeed
6. Leader's indicated airspeed
7. Sideslip
8. Speedbrake/lift degradation device position
9. Power setting
10. Flight member position

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PHASE: CLIMB (3.0)
SEGMENT: RENDEZVOUS (3.3)
DECISION: Determine/control bearing (3.3.3)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Desired bearing line – constant
2. Desired bearing line – curvilinear
3. Actual bearing from leader
4. Leader's rate of turn

PHASE: CLIMB (3.0)
SEGMENT: RENDEZVOUS (3.3)
DECISION: Determine/control altitude (3.3.4)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Leader's altitude
2. Desired ownship altitude
3. Altitude (AGL/MSL)
4. Vertical velocity change(s)
5. Position of horizon
6. Engine thrust available

PHASE: CLIMB (3.0)
SEGMENT: NAVIGATE (3.4)
DECISION: Adjust flight plan, as required (3.4.7)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: CLIMB (3.0)
SEGMENT: COMMUNICATE (3.5)
DECISION: Set EMCON (3.5.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Cruise/Trim aircraft (4.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum altitude
15. Optimum fuel flow
16. Ground speed
17. Altimeter barometric pressure setting

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Select pilot relief mode (4.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold – AGL measuring device
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Analyze GO/NO-GO Criteria (4.1.4)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:
1. Engine performance
2. Flight control system operability
3. System performance
4. Directive instructions
5. Flight warnings/cautions/advisories
6. Meteorological conditions (present)
7. Fuel flow
8. Threat condition

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Set formation (4.1.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. Same way, same day

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Interpret Weapons Status Reports (4.1.7)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Weapon armed and ready
2. Weapon armed but not ready
3. Weapon safe
4. Weapon hung
5. Weapon failed
6. Weapon locked/unlocked
7. Weapon degraded
8. Weapon not communicating with mission computer

INFORMATION REQUIREMENTS:

1. Weapons onboard - type/model
2. Weapons onboard - location
3. Weapons onboard - quantity each location
4. Weapons launch modes available
5. Weapons launch mode selected
6. Master mode selected
7. Weapon selected
8. Weapon initialization data preplanned
9. Weapon initialization data received by weapon
10. Weapon prep data availability
11. Weapon prep data receipt by weapon
12. Interval selected (for multiple releases)
13. Minimum interval allowable
14. Arming options available
15. Arming option selected
16. Fuzing options available
17. Fuzing option selected
18. Quantity selected per interval (for multiple release)
19. Weapon auto gain control status (if applicable)
20. Weapon threat library selected (if applicable)
21. Weapon target type priority selected (if applicable)
22. Terminal guidance option selected

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Select sensor modes (4.1.11)
DECISION TYPE: 1
CRITICALITY: 4
ALTERNATIVES:

1. On-all passive
2. On-all Active
3. On-all LPI
4. On-auto mode optimization
5. On-preplanned initialization
6. Off
7. Standby

INFORMATION REQUIREMENTS:

1. Sensor modes/submodes available
2. Sensor modes/submodes selected
3. Sensor modes most suitable
4. Bistatic radar file track potential (as receiver)
5. Bistatic NCTR potential (as received)
6. Bistatic radar potential (as emitter)
7. Equivalent illumination/luminance levels
8. Individual sensor status
9. Auto mode optimization engaged/rejected
10. Preplanned initialization selected
11. Sensor boresight status
12. Individual sensor FOV/FOR available/selected
13. Individual sensor magnification available/selected
14. Individual sensor track mode available/selected
15. Individual sensor autotarget acquisition available/selected
16. Target type anticipated
17. Target location anticipated
18. TKBS status
19. Threat imminence
20. Sensor threat library selected
21. Sensor correlation for display selected/available
22. Display information reject level(s) available/selected
23. Sensor footprint (individual)
24. Sensor footprint (suite)
25. Data link status
26. System status
27. Auto hand-off to weapon(s) available/selected
28. Sensor to sensor cueing available/selected
29. Sensor self-protect mode(s) available/selected

PHASE: CRUISE OUT (4.0)
SEGMENT: NAVIGATE (4.2)
DECISION: Adjust flight plan, as required (4.2.7)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: CRUISE OUT (4.0)
SEGMENT: NAVIGATE (4.2)
DECISION: Determine defensive grid position (4.2.8)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. Proceed to position assigned by controlling agency
2. Autonomously fill vacant position IAW doctrine
3. Fill station IAW on-scene direction (non-AEW)
4. Do not proceed to any station – anchor
5. Do not proceed to any station – unilateral contact investigation
6. Delay decision

INFORMATION REQUIREMENTS:

1. Ownship position
2. Ownship position validity/verification
3. Grid reference position – VL (x,y,z)
4. Threat axis
5. Grid reference bearing
6. Grid reference distance
7. Number of defensive grid positions
8. Position of defensive grid positions
9. Status of defensive grid positions (filled/vacant)
10. Position/assignment of other ownforce members
11. Systems performance of other ownforce members
12. Ownship position assignment (if any)
13. Position of ownforce fighter with lowest fuel state
14. Defensive grid area meteorological conditions
15. Imminence of engagement
16. Directive instructions
17. Presence of unidentified contacts
18. Combat readiness states of ownforce members
19. Optimum routing
20. Threat condition
21. Time on station
22. ROE
23. Bingo/bugout plan
24. Contrail level
25. System status

PHASE: CRUISE OUT (4.0)
SEGMENT: COMMUNICATE (4.3)
DECISION: Set EMCON status (4.3.4)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status

PHASE: ASSUME CAP (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Control aircraft operation and flight (5.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum heading
15. Local barometric pressure
16. Altimeter barometric pressure setting
17. Low airspeed cue
18. High angle of attack cue

PHASE: ASSUME CAP (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Select pilot relief mode (5.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Attitude hold-barometric
3. Attitude hold – AGL measuring device
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Attitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: ASSUME CAP (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Analyze tactical situation (5.1.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. System status
2. Weapons inventory
3. Ownship aerodynamic capabilities/limits
4. Imminence of combat
5. Meteorological conditions (present)
6. Presence/absence of flight member
7. Flight member position
8. Anticipated threat
9. Fuel state
10. Fuel flow
11. Combat package
12. Bingo fuel
13. Tanker availability/position/give
14. CV/HVU position
15. Station position
16. Position of ownforce air defense platforms
17. Presence of AEW support
18. Quality of AEW support
19. Presence of national asset support
20. Quality of national asset support
21. Bugout fuel state
22. Weapon footprint
23. Sensor footprint (individual)
24. Threat condition

PHASE: ASSUME CAP (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Set formation (5.1.5)
DECISION TYPE: 1
CRITICALITY: 4
ALTERNATIVES:
1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. No formation required

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

PHASE: ASSUME CAP (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Determine frequency of visual search (5.1.8)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain avoidance
5. Meteorological conditions (present)
6. Flight member position
7. Formation maneuvering requirements

PHASE: ASSUME CAP (5.0)
SEGMENT: RESPONSE TO THREAT (5.2)
DECISION: Determine threat degree (5.2.2)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Availability of ownforce support - jamming
5. Availability of ownforce support - weapon
6. Availability of countermeasures (type and no.)
7. Capability of available countermeasures against threat
8. TMDS status
9. PELTS status

PHASE: ASSUME CAP (5.0)
SEGMENT: RESPONSE TO THREAT (5.2)
DECISION: Determine imminence of threat (5.2.3)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Presence of RF energy radiating along route of flight
8. Presence of laser energy along route of flight
9. Automatic threat avoidance system status
10. Auto threat avoidance system selection/disable
11. Threat guidance phase (i.e., terminal, mid-course, etc.)
12. Threat knowledge of ownship presence

PHASE: ASSUME CAP (5.0)
SEGMENT: RESPONSE TO THREAT (5.2)
DECISION: Determine to avoid, suppress, or intercept (5.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Weapons inventory
3. Threat formation/tactics
4. Threat capabilities (airframe/sensors/weapons)
5. Effect of avoidance on anti-bomber mission geometry
6. Effect of intercept ownforce launch opportunities
7. Availability of self protection jamming
8. Effectiveness of self protection jamming
9. Position of other ownforce anti-air assets
10. Threat position
11. Bingo fuel
12. Bugout fuel state

PHASE: ASSUME CAP (5.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (5.3)
DECISION: Operate sensors (5.3.1)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: ASSUME CAP (5.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (5.3)
DECISION: Interpret sensor data/information (5.3.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Target(s) cueing
2. Attitude
3. Highest threat target(s) – priority
4. Preplanned target data
5. Coincidence of multiple sensor target designation
6. Bearing/distance/rate of multi-sensor designation error
7. Ownship position
8. Onboard obtained positional information
9. Individual sensor status
10. Externally provided targeting information
11. Directive instructions
12. On-call uncorrelated processed individual sensor data/information
13. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
14. Threat imminence
15. Threat degree
16. Recommended action(s) to counter threat
17. Imminent catastrophic event warning (i.e. ground warning, missile/bullet impact, etc.)
18. Target kill
19. Stationing compliance
20. Inflight mission planning information
21. Flight member status
22. Externally provided intelligence information
23. Spatial orientation imagery
24. Spatial orientation graphics
25. Confidence level of presented data

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PHASE: ASSUME CAP (5.0)
SEGMENT: PRELIMINARY RAID ASSESSMENT (5.4)
DECISION: Perform target acquisition (5.4.2)
DECISION TYPE: I
CRITICALITY: 2
ALTERNATIVES:

1. Utilize active sensor(s) only
2. Utilize passive sensor(s) only
3. Utilize onboard smart weapons
4. Utilize combination of active and passive sensors
5. Utilize external source targeting information
6. Utilize visual scan
7. Utilize automatic acquisition system

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Sensor image prediction
3. Actual sensor image
4. Perspective view (anticipated)
5. Actual perspective view
6. Elapsed time/time to go
7. Distance to target
8. Ownship position
9. Target location
10. Target cueing (sensor to sensor)
11. Sensor footprint (individual)
12. Individual sensor status
13. Weapons(s) status
14. Weapons delivery system status
15. Target cueing (sensor/navigation system to eyeball)
16. Anticipated target signature
17. Source of externally provided targeting information
18. Accuracy of externally provided targeting information
19. Coincidence of multiple sensor target area localization
20. Bearing/distance/rate of multi-sensor localization error
21. Weapon selected
22. Weapon mode selected
23. Meteorological conditions (present)
24. Threat knowledge of ownship presence
25. Individual sensor FOV/FOR available/selected
26. Individual sensor magnification available/selected
27. Individual sensor auto target acquisition available/selected
28. Data link status
29. System status
30. Weapons system master mode
31. Navigation system/sensor correlation/error
32. Indication of automatic acquisition requirement

PHASE: ASSUME CAP (5.0)
SEGMENT: PRELIMINARY RAID ASSESSMENT (5.4)
DECISION: Perform target identification/classification (5.4.3)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Yes – that is my target
2. No – that is not my target
3. Delay decision

INFORMATION REQUIREMENTS:

1. Automatic target recognition system decision/confidence level
2. NCTR/PNCTR decision/confidence level
3. External source verification of initial identification
4. PELTS decision/confidence level
5. Sensor image prediction
6. Actual sensor image
7. Target location
8. Target shape, signature, albedo
19. Expected target shape, signature, albedo for comparison
10. Indication of auto target acquisition and NATO identification

PHASE: ASSUME CAP (5.0)
SEGMENT: NAVIGATE (5.5)
DECISION: Adjust flight plan, as required (5.5.8)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: ASSUME CAP (5.0)
SEGMENT: NAVIGATE (5.5)
DECISION: Perform navigation system update (5.5.9)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:
1. Visual check acceptable (within tolerance)
2. System check – accept
3. System check – reject

INFORMATION REQUIREMENTS:

1. Visual position
2. INS position
3. GPS position
4. TRN position
5. X/Y position of given (selected) points
6. Computed distance error
7. Computed direction of error
8. Drift rate (distance/unit of time)
9. Sensor selected for update (radar, fly over (human eye), HUD, TACAN, etc.)
10. System acceptance of accept/reject decision
11. Auto advisory that navigation system is in need of update [i.e., drift rate interlock – or – auto multi-sensor correlation] or is being updated
12. Assurance that designated position is same as x,y position (i.e., navigation and sensor both referencing same point)
13. External update

PHASE: ASSUME CAP (5.0)
SEGMENT: NAVIGATE (5.5)
DECISION: Determine appropriate defensive grid position (5.5.10)
DECISION TYPE: I
CRITICALITY: 2
ALTERNATIVES:

1. Proceed to position assigned by controlling agency
2. Autonomously fill vacant position IAW doctrine
3. Fill station IAW on-scene direction (non-AEW)
4. Do not proceed to any station – anchor
5. Do not proceed to any station – unilateral contact investigation
6. Delay decision

INFORMATION REQUIREMENTS:

1. Ownship position
2. Ownship position validity/verification
3. Grid reference position – VL (x,y,z)
4. Threat axis
5. Grid reference bearing
6. Grid reference distance
7. Number of defensive grid positions
8. Position of defensive grid positions
9. Status of defensive grid positions (filled/vacant)
10. Position/assignment of other ownforce members
11. Systems performance of other ownforce members
12. Ownship position assignment (if any)
13. Position of ownforce fighter with lowest fuel state
14. Defensive grid area meteorological conditions
15. Imminence of engagement
16. Directive instructions
17. Presence of unidentified contacts
18. Combat readiness states of ownforce members
19. Optimum routing
20. Threat condition
21. Time on station
22. ROE
23. Bingo/bugout plan
24. Contrail level
25. System status

PHASE: ASSUME CAP (5.0)
SEGMENT: COMMUNICATE (5.6)
DECISION: Set EMCON (5.6.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status

PHASE: INTERCEPT (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Control aircraft operation and flight (6.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Sideslip
14. Optimum airspeed
15. Optimum vertical velocity
16. Optimum heading
17. Local barometric pressure
18. Altimeter barometric pressure setting
19. Low airspeed cue
20. High angle of attack cue
21. High yaw rate cue
22. Spin recovery response required
23. Present G
24. Max G

PHASE: INTERCEPT (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Select pilot relief mode (6.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold – AGL measuring device
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: INTERCEPT (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Analyze tactical situation (6.1.7)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. System status
2. Weapons inventory
3. Ownship aerodynamic capabilities/limits
4. Threat imminence
5. Meteorological conditions (present)
6. Flight member position
7. Anticipated threat
8. Threat position
9. Threat heading
10. Threat speed
11. Fuel state
12. Fuel flow
13. Combat package
14. Bingo fuel
15. Tanker availability/position/give
16. CV/HVU position
17. Station position
18. Position of ownforce air defense platforms
19. Presence of AEW support
20. Quality of AEW support
21. Presence of national asset support
22. Quality of national asset support
23. Bugout fuel state
24. Weapon footprint
25. Weapons footprint - threat
26. Sensor footprint (individual)
27. Sensor footprint – threat

PHASE: INTERCEPT (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Determine frequency of visual search (6.1.9)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain avoidance
5. Meteorological conditions (present)
6. Flight member position
7. Formation maneuvering requirements
8. Position of wingman

PHASE: INTERCEPT (6.0)
SEGMENT: RESPONSE TO THREAT (6.2)
DECISION: Determine threat degree (6.2.2)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Availability of ownforce support - jamming
5. Availability of ownforce support - weapon
6. Availability of countermeasures (type and no.)
7. Capability of available countermeasures against threat
8. TMDS status
9. PELTS status

PHASE: INTERCEPT (6.0)
SEGMENT: RESPONSE TO THREAT (6.2)
DECISION: Determine imminence of threat (6.2.3)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Presence of RF energy radiating along route of flight
8. Presence of laser energy along route of flight
9. Automatic threat avoidance system status
10. Auto threat avoidance system selection/disable
11. Threat guidance phase (i.e., terminal, mid-course, etc.)
12. Threat knowledge of ownship presence

PHASE: INTERCEPT (6.0)
SEGMENT: RESPONSE TO THREAT (6.2)
DECISION: Determine to avoid, suppress, or intercept (6.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Weapons inventory
3. Threat formation/tactics
4. Threat capabilities (airframe/sensors/weapons)
5. Effect of avoidance on anti-bomber mission geometry
6. Effect of intercept ownforce launch opportunities
7. Availability of self protection jamming
8. Effectiveness of self protection jamming
9. Position of other ownforce anti-air assets
10. Threat position
11. Bingo fuel
12. Bugout fuel state

PHASE: INTERCEPT (6.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (6.3)
DECISION: Operate sensors (6.3.1)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: INTERCEPT (6.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (6.3)
DECISION: Interpret sensor data/information (6.3.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Target(s) cueing
2. Attitude
3. Highest threat target(s) – priority
4. Preplanned target data
5. Coincidence of multiple sensor target designation
6. Bearing/distance/rate of multi-sensor designation error
7. Ownship position
8. Onboard obtained positional information
9. Individual sensor status
10. Externally provided targeting information
11. Directive instructions
12. On-call uncorrelated processed individual sensor data/information
13. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
14. Threat imminence
15. Threat degree
16. Recommended action(s) to counter threat
17. Imminent catastrophic event warning (i.e. ground warning, missile/bullet impact, etc.)
18. Target kill
19. Stationing compliance
20. Inflight mission planning information
21. Flight member status
22. Externally provided intelligence information
23. Spatial orientation imagery
24. Spatial orientation graphics
25. Confidence level of presented data

PHASE: INTERCEPT (6.0)
SEGMENT: RAID ASSESSMENT (SORTING) (6.4)
DECISION: Assess raid (6.4.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Position of raid
2. Ownship position
3. Position of defended unit
4. Sensor status
5. Sensor sensitivity
6. Type of ECM employed by threat
7. Sensor determined raid count – ownship/confidence level
8. Sensor determined raid track
9. Sensor correlation of raid track – ownship
10. Sensor correlation of raid track – external/confidence level
11. Threat raid doctrine
12. Threat weapon footprint

PHASE: INTERCEPT (6.0)
SEGMENT: RAID ASSESSMENT (6.4)
DECISION: Determine target assignments (6.4.5)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Ownship status – weapons
2. Ownship status – systems
3. Ownship status – sensors
4. Flight member – weapons
5. Flight member – systems
6. Flight member – sensors
7. Position of raid
8. Optimum attack geometry
9. Pre-briefed doctrine
10. Ownship weapon footprint
11. Flight member weapon footprint
12. Ownship capability to engage (R_{seek}/max)
13. Flight member weapon capability to engage (R_{seek}/max)
14. Threat WRL
15. Fuel state
16. Flight member fuel status
17. Threat time-to-WRL

PHASE: INTERCEPT (6.0)
SEGMENT: RAID ASSESSMENT (SORTING) (6.4)
DECISION: Determine preliminary targeting (6.4.6)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Sort by range
2. Sort by altitude
3. Sort by left/right
4. Sort according to weapons remaining
5. Sort by V_c
6. Sort by threat capability

INFORMATION REQUIREMENTS:

1. Number of threat aircraft in raid
2. Identification of threat platforms in raid
3. Raid formation
4. Status of sensors – ownship
5. Status of sensors – flight member
6. Status of weapons systems – ownship
7. Status of weapons systems – flight member
8. Weapons inventory
9. Weapons inventory – flight member
10. Position of aircraft being tracked by flight member
11. Flight member position
12. Relative position of other ownforce aircraft
13. Directive instructions
14. Threat speed
15. Rate of closure
16. Threat type identification
17. Real time range capability of threat weapons
18. Threat condition
19. Weapon employment restriction(s) in effect (i.e. hold, tight, free)

PHASE: INTERCEPT (6.0)
SEGMENT: RAID ASSESSMENT (6.4)
DECISION: Determine dynamic geometry maneuvers required (6.4.7)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Ownship position
2. Flight member position
3. Weapons inventory
4. Weapons inventory – flight member
5. WCS status – ownship
6. WCS status – flight member
7. Fuel state
8. Fuel state – flight member
9. CV/HVU position
10. Weapons footprint – ownship [by weapon]
11. Weapons footprint – flight member [by weapon]
12. Sensor footprint (individual)
13. Sensor footprint – flight member
14. Threat – platform type
15. Threat – platform count
16. Threat – possible weapon footprint
17. Threat – formation
18. Threat position
19. Time to threat entry into weapon footprint – ownship
20. Time to CV/HVU entry into weapon footprint – threat
21. Weapon selected
22. Optimum intercept course to selected target(s)
23. Optimum intercept course to raid centroid
24. Airspeed
25. Angle of attack
26. Heading
27. Threat speed
28. Threat heading
29. TKBS designated threat platform engagement priority sequence
30. TKBS designated optimum ownship attack profile to maximize raid attrition

PHASE: INTERCEPT (6.0)
SEGMENT: NAVIGATE (6.5)
DECISION: Adjust flight plan, as required (6.5.5)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: INTERCEPT (6.0)
SEGMENT: COMMUNICATE (6.6)
DECISION: Set EMCON (6.6.4)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status

PHASE: ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Control aircraft operation and flight (7.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Sideslip
14. Optimum airspeed
15. Optimum vertical velocity
16. Optimum heading
17. Local barometric pressure
18. Altimeter barometric pressure setting
19. Low airspeed cue
20. High angle of attack cue
21. High yaw rate cue
22. Spin recovery response required
23. Present G
24. Max G

PHASE: ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Select pilot relief mode (7.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold – AGL measuring device
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Analyze tactical situation (7.1.5)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. System status
2. Weapons inventory
3. Ownship aerodynamic capabilities/limits
4. Threat imminence
5. Threat degree
6. Meteorological conditions (present)
7. Presence/absence of flight member
8. Flight member position
9. Anticipated threat
10. Fuel state
11. Fuel flow
12. Combat package
13. Bingo fuel
14. Tanker availability/position/give
15. CV/HVU position
16. Station position
17. Position of ownforce air defense platforms
18. Presence of AEW support
19. Quality of AEW support
20. Bugout fuel state
21. Weapon footprint
22. Sensor footprint (individual)
23. Threat position

PHASE: ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Determine frequency of visual search (7.1.7)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain avoidance
5. Meteorological conditions (present)
6. Flight member position
7. Formation maneuvering requirements
8. Position of wingman

PHASE: ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Analyze disengagement criteria (7.1.8)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Bingo fuel
2. Bugout fuel state
3. Bugout heading
4. Present fuel
5. Ownship position
6. Tactical viability of continued engagement
7. Flight member position
8. Flight member's posture (offensive/defensive)
9. Flight member fuel status
10. Weapons inventory
11. Weapons inventory – flight member
12. Energy state – ownship
13. Energy state – flight member
14. System status
15. Number of threat aircraft in raid
16. Relative position of high value targets
17. Effects of delayed disengagement on prosecution of high value targets
18. Position of other high value threat platforms

PHASE: ATTACK (7.0)
SEGMENT: RESPONSE TO THREAT (7.2)
DECISION: Determine threat degree (7.2.3)
DECISION TYPE: 1
CRITICALITY: 1
ALTERNATIVES:
1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Availability of ownforce support - jamming
5. Availability of ownforce support - weapon
6. Availability of countermeasures (type and no.)
7. Capability of available countermeasures against threat
8. TMDS status
9. PELTS status

PHASE: ATTACK (7.0)
SEGMENT: RESPONSE TO THREAT (7.2)
DECISION: Determine imminence of threat (7.2.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Topography along route of flight
8. Presence of RF energy radiating along route of flight
9. Presence of laser energy along route of flight
10. Automatic threat avoidance system status
11. Auto threat avoidance system selection/disable
12. Threat guidance phase (i.e., terminal, mid-course, etc.)
13. Threat knowledge of ownship presence

PHASE: ATTACK (7.0)
SEGMENT: RESPONSE TO THREAT (7.2)
DECISION: Determine to avoid or suppress (7.2.5)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Weapons inventory
3. Threat formation/tactics
4. Threat capabilities (airframe/sensors/weapons)
5. Effect of avoidance on anti-bomber mission geometry
6. Effect of intercept ownforce launch opportunities
7. Availability of self protection jamming
8. Effectiveness of self protection jamming
9. Position of other ownforce anti-air assets
10. Threat position
11. Bingo fuel
12. Bugout fuel state

PHASE: ATTACK (7.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (7.3)
DECISION: Operate sensors (7.3.1)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: ATTACK (7.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (7.3)
DECISION: Interpret sensor data/information (7.3.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Target(s) cueing
2. Attitude
3. Highest threat target(s) – priority
4. Preplanned target data
5. Coincidence of multiple sensor target designation
6. Bearing/distance/rate of multi-sensor designation error
7. Ownship position
8. Onboard obtained positional information
9. Individual sensor status
10. Externally provided targeting information
11. Directive instructions
12. On-call uncorrelated processed individual sensor data/information
13. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
14. Threat imminence
15. Threat degree
16. Recommended action(s) to counter threat
17. Imminent catastrophic event warning (i.e. ground warning, missile/bullet impact, etc.)
18. Target attrition
19. Stationing compliance
20. Inflight mission planning information
21. Flight member status
22. Externally provided intelligence information
23. Spatial orientation imagery
24. Spatial orientation graphics
25. Confidence level of presented data

PHASE: ATTACK (7.0)
SEGMENT: FINAL TARGETING (7.4)
DECISION: Determine dynamic geometry maneuvers required (7.4.1)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Ownship position
2. Flight member position
3. Weapons inventory
4. Weapons inventory – flight member
5. WCS status – ownship
6. WCS status – flight member
7. Fuel state
8. Fuel state – flight member
9. CV/HVU position
10. Weapons footprint – ownship [by weapon]
11. Weapons footprint – flight member [by weapon]
12. Sensor footprint (individual)
13. Sensor footprint – flight member
14. Threat – platform type
15. Threat – platform count
16. Threat – possible weapon footprint
17. Threat – formation
18. Threat position
19. Time to threat entry into weapon footprint – ownship
20. Time to CV/HVU entry into weapon footprint – threat
21. Weapon selected
22. Optimum intercept course to selected target(s)
23. Optimum intercept course to raid centroid
24. Airspeed
25. Angle of attack
26. Heading
27. Threat speed
28. Threat heading
29. TKBS designated threat platform engagement priority sequence
30. TKBS designated optimum ownship attack profile to maximize raid attrition

PHASE: ATTACK (7.0)
SEGMENT: FINAL TARGETING (7.4)
DECISION: Select weaponry (7.4.4)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. Choose AAAM
2. Choose AMRAAM
3. Choose ASRAAM
4. Choose guns
5. Choose automatic selection
6. Choose other (i.e. laser)

INFORMATION REQUIREMENTS:
1. Range to target
2. Target bearing
3. Target altitude
4. Target closure
5. Target speed
5. Target track crossing angle
6. Target track crossing rate
7. Target aspect angle
8. Target RCS
9. Target IR signature
10. Target RF emissions
11. Target ECM
12. Weapons inventory
13. Weapon status
14. Weapon's PK against target

PHASE: ATTACK (7.0)
SEGMENT: WEAPON DELIVERY (7.5)
DECISION: Commit weapon (7.5.2)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Automatic execution
2. Manual execution at maximum range – computer solution
3. Manual execution at minimum range – computer solution
4. Manual execution at heart of envelope – computer solution
5. Manual execution at preplanned point – manual solution

INFORMATION REQUIREMENTS:

1. Delivery mode selected
2. Flight path to release point
3. Precise instant for manual release (shoot cue)
4. Execution accomplishment indication
5. Munition time of flight
6. Weapon time of flight count down (to weapon onboard guidance handoff)
7. Automatic mode weapons delivery solution indication (cueing)
8. CCIP/CCRP mode weapons delivery solution indication (cueing)
9. Slant range
10. Target altitude
11. Winds at target
12. Horizontal range
13. Altitude (AGL/MSL)
14. True airspeed
15. Attitude
16. Flight path
17. Standby (to release) cue
18. Terminate attack cue
18. G-loading
19. Angle of attack
20. Threat imminence
21. Threat degree
22. Directive instructions
23. Threat knowledge of ownship presence
24. Automatic target attack system engagement indication
25. Target heading
26. Target speed
27. Target aspect angle

PHASE: ATTACK (7.0)
SEGMENT: DAMAGE ASSESSMENT (7.6)
DECISION: Determine target damage (7.6.1)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Sensor derived target return – presence/absence
2. Loss of / change in target RF emission
3. Loss of / change in target IR emission
4. Target position (x,y,z) - last detection
5. Target position (x,y,z) - extrapolated for current time
6. Target heading
7. Target speed
8. Sensor footprint (individual)

PHASE: ATTACK (7.0)
SEGMENT: DAMAGE ASSESSMENT (7.6)
DECISION: Assess re-attack options (7.6.2)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Target position
2. Target heading
3. Target speed
4. Target RF emissions
5. Ownship big picture relationships (other threat ASM platforms, other threat escort, friendly forces, etc.)
6. Weapons inventory
7. Fuel state
8. Fuel flow
9. Bugout fuel state
10. Bingo fuel state
11. Target priorities
12. Directive instructions

PHASE: ATTACK (7.0)
SEGMENT: NAVIGATE (7.7)
DECISION: Adjust flight plan, as required (7.7.5)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: ATTACK (7.0)
SEGMENT: COMMUNICATE (7.8)
DECISION: Set EMCON (7.8.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Radar transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

PHASE: RETURN TO CAP (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Control aircraft operation and flight (8.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Sideslip
14. Optimum airspeed
15. Optimum vertical velocity
16. Optimum heading
17. Local barometric pressure
18. Altimeter barometric pressure setting
19. Low airspeed cue
20. High angle of attack cue

PHASE: RETURN TO CAP (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Select pilot relief mode (8.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL measuring device
4. Heading hold
5. Auto trim
6. Manual trim
7. Auto throttles
8. Manual throttles
9. None
10. Couple – External
11. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: RETURN TO CAP (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Set formation (8.1.5)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. No formation required

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

PHASE: RETURN TO CAP (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Analyze tactical situation (8.1.6)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. System status
2. Weapons inventory
3. Ownship aerodynamic capabilities/limits
4. Imminence of combat
5. Meteorological conditions (present)
6. Presence/absence of flight member
7. Flight member position
8. Anticipated threat
9. Fuel state
10. Fuel flow
11. Combat package
12. Bingo fuel state
13. Bugout fuel state
14. Tanker availability/position/give
15. CV/HVU position
16. Station position
17. Position of ownforce air defense platforms
18. Presence of AEW support
19. Quality of AEW support
20. Weapon footprint
21. Sensor footprint (individual)

PHASE: RETURN TO CAP (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Determine frequency of visual search (8.1.8)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain avoidance
5. Meteorological conditions (present)
6. Flight member position
7. Formation maneuvering requirements
8. Position of wingman

PHASE: RETURN TO CAP (8.0)
SEGMENT: RESPONSE TO THREAT (8.2)
DECISION: Determine threat degree (8.2.2)
DECISION TYPE: 1
CRITICALITY: 1
ALTERNATIVES:
1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Availability of ownforce support - jamming
5. Availability of ownforce support - weapon
6. Availability of countermeasures (type and no.)
7. Capability of available countermeasures against threat
8. TMDS status
9. PELTS status

PHASE: RETURN TO CAP (8.0)
SEGMENT: RESPONSE TO THREAT (8.2)
DECISION: Determine imminence of threat (8.2.3)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Presence of RF energy radiating along route of flight
8. Presence of laser energy along route of flight
9. Automatic threat avoidance system status
10. Auto threat avoidance system selection/disable
11. Threat guidance phase (i.e., terminal, mid-course, etc.)
12. Threat knowledge of ownship presence

PHASE: RETURN TO CAP (8.0)
SEGMENT: RESPONSE TO THREAT (8.2)
DECISION: Determine to avoid, suppress, or intercept (8.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Weapons inventory
3. Threat formation/tactics
4. Threat capabilities (airframe/sensors/weapons)
5. Effect of avoidance on anti-bomber mission geometry
6. Effect of intercept ownforce launch opportunities
7. Availability of self protection jamming
8. Effectiveness of self protection jamming
9. Position of other ownforce anti-air assets
10. Threat position
11. Fuel state
12. Fuel flow
13. Bingo fuel
14. Bugout fuel state
15. Ownship battle damage (presence/extent)

PHASE: RETURN TO CAP (8.0)
SEGMENT: COORDINATE SENSOR ACTIVITIES (8.3)
DECISION: Operate sensors (8.3.1)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: RETURN TO CAP (8.0)
SEGMENT: COORDINATE SENSOR ACTIVITIES (8.3)
DECISION: Interpret sensor data/information (8.3.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Target(s) cueing
2. Attitude
3. Highest threat target(s) – priority
4. Preplanned target data
5. Coincidence of multiple sensor target designation
6. Bearing/distance/rate of multi-sensor designation error
7. Ownship position
8. Onboard obtained positional information
9. Individual sensor status
10. Externally provided targeting information
11. Directive instructions
12. On-call uncorrelated processed individual sensor data/information
13. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
14. Threat imminence
15. Threat degree
16. Recommended action(s) to counter threat
17. Imminent catastrophic event warning (i.e. ground warning, missile/bullet impact, etc.)
18. Target attrition
19. Stationing compliance
20. Inflight mission planning information
21. Flight member status
22. Externally provided intelligence information
23. Spatial orientation imagery
24. Spatial orientation graphics
25. Confidence level of presented data

PHASE: RETURN TO CAP (8.0)
SEGMENT: AVIATE (8.4)
DECISION: Adjust flight plan, as required (8.4.8)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: RETURN TO CAP (8.0)
SEGMENT: NAVIGATE (8.4)
DECISION: Perform navigation system update (8.4.9)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:
1. Visual check acceptable (within tolerance)
2. System check – accept
3. System check – reject

INFORMATION REQUIREMENTS:

1. Visual position
2. INS position
3. GPS position
4. TRN position
5. X/Y position of given (selected) points
6. Computed distance error
7. Computed direction of error
8. Drift rate (distance/unit of time)
9. Sensor selected for update (radar, fly over (human eye), HUD, TACAN, etc.)
10. System acceptance of accept/reject decision
11. Auto advisory that navigation system is in need of update [i.e., drift rate interlock – or – auto multi-sensor correlation] or is being updated
12. Assurance that designated position is same as x,y position (i.e., navigation and sensor both referencing same point)
13. External update

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PHASE: RETURN TO CAP (8.0)
SEGMENT: NAVIGATE (8.4)
DECISION: Determine defensive grid position (8.4.10)
DECISION TYPE: I
CRITICALITY: 2
ALTERNATIVES:

1. Proceed to position assigned by controlling agency
2. Autonomously fill vacant position IAW doctrine
3. Fill station IAW on-scene direction (non-AEW)
4. Do not proceed to any station – anchor
5. Do not proceed to any station – unilateral contact investigation
6. Delay decision

INFORMATION REQUIREMENTS:

1. Ownship position
2. Ownship position validity/verification
3. Grid reference position – VL (x,y,z)
4. Threat axis
5. Grid reference bearing
6. Grid reference distance
7. Number of defensive grid positions
8. Position of defensive grid positions
9. Status of defensive grid positions (filled/vacant)
10. Position/assignment of other ownforce members
11. Systems performance of other ownforce members
12. Ownship position assignment (if any)
13. Position of ownforce fighter with lowest fuel state
14. Defensive grid area meteorological conditions
15. Imminence of engagement
16. Directive instructions
17. Presence of unknown contacts
18. Combat readiness states of ownforce members
19. Optimum routing
20. Threat condition
21. Time on station
22. ROE
23. Bingo/bugout plan
24. Contrail level
25. System status

PHASE: RETURN TO CAP (8.0)
SEGMENT: COMMUNICATE (8.5)
DECISION: Set EMCON (8.5.4)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status

PHASE: RETURN TO FORCE (9.0)
SEGMENT: AVIATE (9.1)
DECISION: Control aircraft operation and flight (9.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Sideslip
14. Optimum airspeed
15. Optimum vertical velocity
16. Optimum heading
17. Local barometric pressure
18. Altimeter barometric pressure setting
19. Low airspeed cue
20. High angle of attack cue

PHASE: RETURN TO FORCE (9.0)
SEGMENT: AVIATE (9.1)
DECISION: Select pilot relief mode (9.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL measuring device
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: RETURN TO FORCE (9.0)
SEGMENT: AVIATE (9.1)
DECISION: Set formation (9.1.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. No formation required

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

PHASE: RETURN TO FORCE (9.0)
SEGMENT: AVIATE (9.1)
DECISION: Determine frequency of visual search (9.1.6)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain avoidance
5. Meteorological conditions (present)
6. Flight member position
7. Formation maneuvering requirements
8. Position of wingman

PHASE: RETURN TO FORCE (9.0)
SEGMENT: RENDEZVOUS (9.3)
DECISION: Determine/control closure (9.3.2)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Desired rate of closure
2. Rate of closure
3. Distance between flight members
4. Disengagement opportunities/options
5. Joiner's indicated airspeed
6. Leader's indicated airspeed
7. Sideslip
8. Speedbrake/lift degradation device position
9. Power setting
10. Flight member position

PHASE: RETURN TO FORCE (9.0)
SEGMENT: RENDEZVOUS (9.3)
DECISION: Determine/control bearing (9.3.3)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Desired bearing line – constant
2. Desired bearing line – curvilinear
3. Actual bearing from leader
4. Leader's rate of turn

PHASE: RETURN TO FORCE (9.0)
SEGMENT: RENDEZVOUS (9.3)
DECISION: Determine/control altitude (9.3.4)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Leader's altitude
2. Desired ownship altitude
3. Altitude (AGL/MSL)
4. Vertical velocity change(s)
5. Position of horizon
6. Engine thrust available

PHASE: RETURN TO FORCE (9.0)
SEGMENT: AVIATE (9.4)
DECISION: Adjust flight plan, as required (9.4.7)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: RETURN TO FORCE (9.0)
SEGMENT: COMMUNICATE (9.5)
DECISION: Set EMCON (9.5.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status

PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Select pilot relief mode (10.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL measuring device
4. Heading hold
5. Auto trim
6. Manual trim
7. Auto throttles
8. Manual throttles
9. None
10. Couple – External
11. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Control aircraft operation and flight (10.1.5)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum vertical velocity
15. Optimum heading
16. Local barometric pressure
17. Altimeter barometric pressure setting

PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Set recovery formation, as required (10.1.6)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:
1. Parade
2. Cruise
3. Trail
4. Separate (individual recoveries)

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position
13. Directive instructions
14. Recovery signal
15. Traffic congestion in marshal
16. Recovery conditions
17. Recovery mode
18. BRC
19. Time of day (local/zulu)
20. Ship location

PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Interpret multi-sensor correlation data (10.1.7)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Surface proximity
2. Planned ship rendezvous point
3. Ship location
4. Optimum routing
5. Spatial orientation imagery
6. Spatial orientation graphics
7. Cueing to ship
8. Cueing to assigned fix
9. Display format availability
10. Attitude
11. System status
12. Recovery status (extant at ship)
13. Ship's BRC
14. Final approach fix location
15. Final approach heading
16. Coincidence of multi-sensor data
17. Bearing/distance/rate of multi-sensor correlation error
18. Ownship position
19. Directive instructions
20. Externally provided recovery information
21. On-call uncorrelated processed individual sensor data/information
22. Ownship big picture relationships (marshal/recovery sequence, etc.)
23. TKBS recommended action(s) for recovery
24. Inflight mission planning information
25. Flight member status
26. Significant meteorological conditions
27. Self-contained glide slope/path information

PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Perform fuel dump, as required (10.1.10)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Dump to maximum arrestment weight
2. Dump to minimum fuel required
3. Dump to maximum arrestment weight fuel required for approach
4. Dump to gross weight as directed
5. Do not dump fuel
6. Delay decision

INFORMATION REQUIREMENTS:

1. Fuel aboard – useable quantity
2. Quantity external fuel
3. Fuel aboard – unusable quantity
4. Aircraft weight – basic airframe and weapons rails
5. External stores weight
6. Suspension equipment weight
7. Maximum allowable trap weight
8. Fuel required
9. Tanker availability/position/give
10. Position in recovery order
11. Flight member's position in recovery order
12. Recovery signal
13. Recovery conditions
14. Recovery mode
15. Present boarding rate
16. EMCON condition
17. Fuel reserve (procedural/personal)
18. Number emergency aircraft inbound
19. Nature of emergency for inbound aircraft
20. Fuel flow
21. Maximum delta capability (in minutes)
22. Fuel dump initiated
23. Fuel dump in progress
24. Fuel dump secured
25. Fuel dump ceased
26. Time of day (local/zulu)
27. Ship location
28. Directive instructions
29. Distance to divert landing site
30. Winds aloft
31. Fuel aboard upon arrival at divert landing site

PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Perform approach/pattern entry (10.1.11)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Vertical velocity
6. Clear of traffic/obstacles
7. Engine performance
8. Hydraulic status
9. Pneumatic status
10. Standard/non-standard recovery
11. Standard instrument recovery
12. Recovery instructions
13. BRC
14. Surface winds
15. Marshall (departure) information (i.e., push time)
16. Charlie time
17. Time of day (local/zulu)
18. Local barometric pressure
19. Altimeter barometric pressure setting
20. System status
21. Ship's automatic landing system status
22. Automatic landing system couple status
23. Internal glide slope/bearing indicator validity status
24. Ship identification
25. Auto throttle response
26. Auto throttle engagement status
27. Angle of attack
28. Glideslope
29. Line-up
30. Ship location
31. Flight warnings/cautions/advisories
32. Optimum heading
33. CCA guidance
34. Recovery conditions
35. Recovery mode
36. Angle of attack - optimum
37. Recovery signal
38. EMCON condition
39. Landing checks complete
40. Wind over deck

PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Perform landing (10.1.14)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Glidepath - optimum
3. Glidepath - present deviation from optimum
4. Course - optimum
5. Course - present deviation from optimum
6. Vertical velocity
7. Angle of attack - optimum
8. Angle of attack
9. Range to touchdown
10. Altitude (AGL/MSL)
11. Aircraft weight - total
12. Fuel weight
13. Bingo fuel state
14. Acknowledgement of ready deck
15. ATC clearance/instruction
16. BRC
17. Final bearing
18. Significant meteorological conditions at ship
19. Air traffic
20. Landing systems status
21. Tailhook position
22. Tailhook snubber pressure
23. Aircraft control surface configuration
24. Home carrier battle damage

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PHASE: RECOVERY (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Determine requirement for missed approach/waveoff (10.1.15)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Optimum fly-away profile
3. Optimum fly-away aircraft configuration
4. Angle of attack – optimum
5. Angle of attack
6. Power setting
7. Recovery pattern constraints
8. Tanker availability/position/give
9. Bingo/divert field position (x,y)
10. Optimum bingo profile
11. Air traffic
12. Home carrier battle damage
13. Fuel state
14. Capability to reach bingo landing site

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PHASE: RECOVERY (10.0)
SEGMENT: NAVIGATE (10.1)
DECISION: Comply with clearance instructions (10.2.5)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Comply strictly with clearance instructions
2. Comply generally with clearance instruction
3. Do not comply
4. Delay decision

INFORMATION REQUIREMENTS:

1. Time of day (local/zulu)
2. Time assigned to be somewhere
3. Location of assigned position (to be)
4. Ship location
5. Ownship position
6. BRC
7. Directive instructions
8. Standard/non-standard recovery
9. Standard instrument recovery
10. Recovery instructions
11. Charlie time
12. Time required to traverse distance to achieve charlie time
13. Delta time
14. Local barometric pressure
15. Altimeter barometric pressure setting
16. Ship identification
17. Winds aloft
18. Wind over deck
19. Glideslope
20. Line-up
21. Angle of attack
22. Flight warnings/cautions/advisories
23. Optimum heading
24. Assigned heading
25. Assigned altitude
26. Assigned airspeed
27. CCA guidance
28. Recovery conditions
29. Recovery mode
30. Recovery signal
31. EMCON condition
32. LSO guidance
33. Optical landing system in use
34. Deck status (ready, fouled, etc.)
35. Capability to comply
36. TKBS recommendation

PHASE: RECOVERY (10.0)
SEGMENT: COMMUNICATE (10.3)
DECISION: Set EMCON (10.3.4)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status

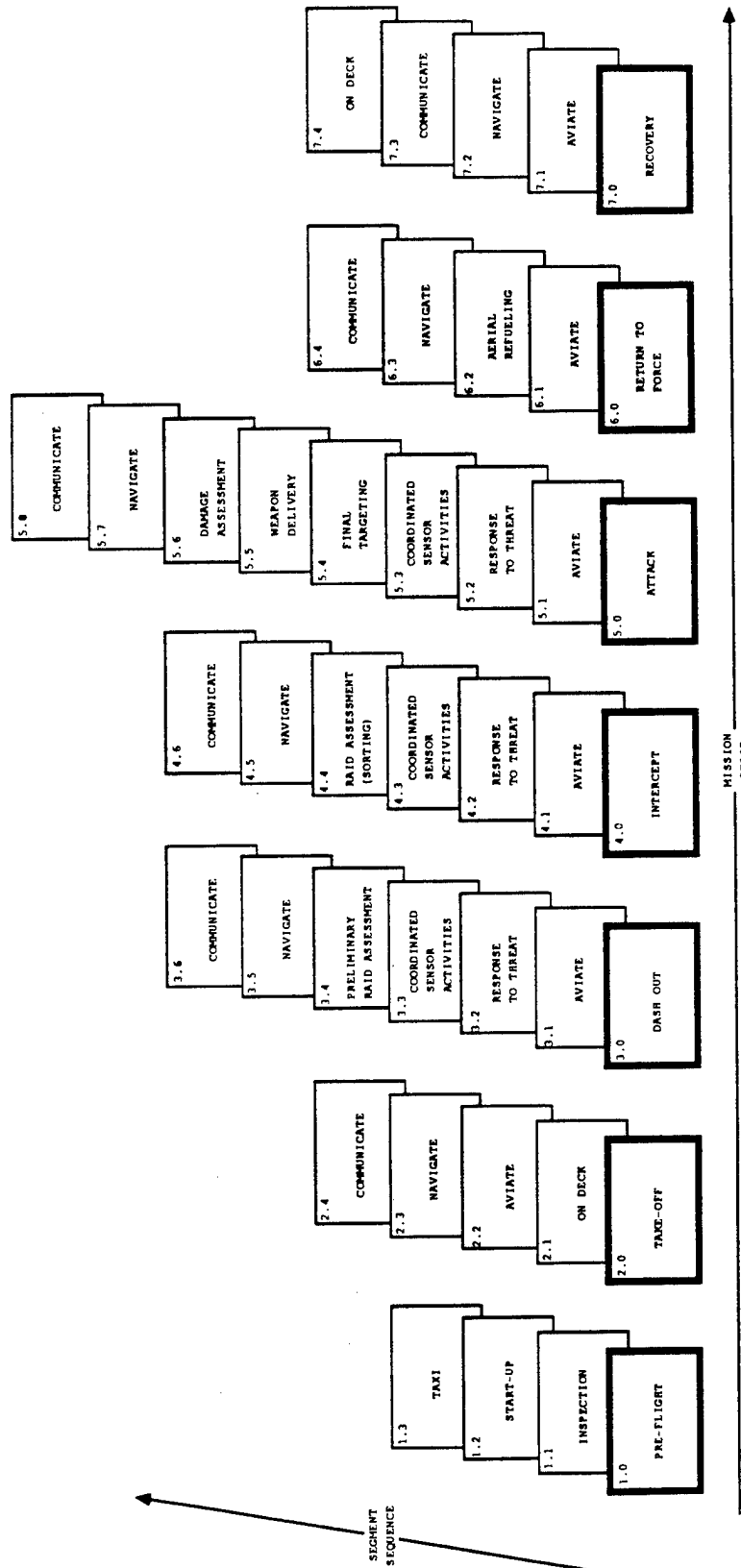
APPENDIX B

DECK LAUNCHED

INTERCEPT

MISSION TASK/DECISION ANALYSES AND INFORMATION REQUIREMENTS

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
1.0		PRE-FLIGHT		
1.1		INSPECTION		
1.1.1		EXTERNAL INSPECTION		
1.1.2		MAN-UP		
1.1.3		COCKPIT CHECKS		
1.2		START-UP		
1.2.1		PERFORM ENGINE START		
1.2.2		PERFORM AVIONICS START/INITIALIZATION		
1.2.3		INSERT PRE-FLIGHT DATA		
1.2.4		PERFORM WEAPONRY INITIALIZATION		
1.2.5		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
1.3		TAXI		
1.3.1		MONITOR SYSTEMS		
1.3.2		TAXI AIRCRAFT		
1.3.3		CHECK AVIONICS		
1.3.4		COMPLY WITH TAXI DIRECTIONS		
1.3.5		RECEIVE FLIGHT CLEARANCE		
1.3.6	YES	SET EMCON	5	1
1.3.7		EXECUTE COMM CHECKS, IAW EMCON		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
2.0		TAKE-OFF		
2.1		ON DECK		
2.1.1		RECEIVE TAKE-OFF CLEARANCE/INSTRUCTIONS		
2.1.2		PERFORM TAKE-OFF CHECKLIST		
2.1.3		VISUAL CHECK OF FLIGHT MEMBER(S) (IF APPLICABLE)		
2.1.4	YES	DETERMINE PREPAREDNESS FOR FLIGHT	1	I
2.2		AVIATE		
2.2.1		INITIATE TAKE-OFF ROLL/PRESS-UP/CAT SHOT		
2.2.2		MONITOR SYSTEMS STATUS		
2.2.3	YES	ESTABLISH AIRCRAFT FLIGHT ATTITUDE/POWER	1	II
2.2.4	YES	ANALYZE GO/NO-GO CRITERIA	2	I
2.2.5		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
2.3		NAVIGATE		
2.3.1		MONITOR NAV SYSTEM		
2.3.2		COMPLY WITH CLEARANCE/INSTRUCTIONS		
2.4		COMMUNICATE		
2.4.1		COMMUNICATE CLEAR INFORMATION WITH CONTROLLING/OTHER PLATFORMS		
2.4.2		COMMUNICATE SECURE INFORMATION WITH CONTROLLING/OTHER PLATFORMS		
2.4.3	YES	SET EMCON	5	I

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
3.0		DASH OUT		
3.1		AVIATE		
3.1.1	YES	CONTROL AIRCRAFT	1	II
3.1.2	YES	SELECT PILOT RELIEF MODE	4	I
3.1.3		MONITOR SYSTEMS STATUS		
3.1.4	YES	ANALYZE GO/NO-GO CRITERIA	4	I
3.1.5	YES	ANALYZE TACTICAL SITUATION	2	II
3.1.6		PERFORM COMBAT CHECKLIST		
3.1.7		CONDUCT WEAPONS STATUS CHECKS		
3.1.8	YES	INTERPRET WEAPONS STATUS REPORTS	3	I
3.1.9		ACTIVATE MISSION RECORDER SYSTEM		
3.1.10	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	3	II
3.2		RESPONSE TO THREAT		
3.2.1		ACTIVATE THREAT DETECTION SYSTEMS		
3.2.2		MONITOR THREAT DETECTION SYSTEMS		
3.2.3	YES	DETERMINE THREAT DEGREE	1	I
3.2.4	YES	DETERMINE IMMINENCE OF THREAT	1	II
3.2.5	YES	DETERMINE TO AVOID, SUPPRESS, OR INTERCEPT	2	II
3.2.6		PERFORM THREAT RESPONSE		
3.3		COORDINATED SENSOR ACTIVITIES		
3.3.1	YES	SELECT SENSOR MODES	3	I
3.3.2	YES	OPERATE SENSORS	2	I
3.3.3		CORRELATE ON-BOARD SENSOR DATA/ INFORMATION		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
3.3.4	YES	CORRELATE EXTERNAL SENSOR DATA/INFORMATION WITH ON-BOARD DATA/INFORMATION	1	II
3.3.5		INTERPRET SENSOR DATA/INFORMATION		
3.4	YES	PRELIMINARY RAID ASSESSMENT	2	I
3.4.1		PERFORM TARGET SEARCH/DETECTION		
3.4.2		PERFORM TARGET ACQUISITION		
3.4.3	YES	PERFORM TARGET IDENTIFICATION/CLASSIFICATION	3	I
3.5	YES	NAVIGATE	2	I
3.5.1		MONITOR POSITION		
3.5.2		MONITOR COURSE		
3.5.3		MONITOR SPEED		
3.5.4		MONITOR ALTITUDE		
3.5.5		DETERMINE APPROPRIATE DEFENSIVE GRID POSITION		
3.5.6	YES	PERFORM NAV SYSTEM UPDATE	5	I
3.6	YES	COMMUNICATE	5	I
3.6.1		COMMUNICATE CLEAR VOICE		
3.6.2		COMMUNICATE SECURE VOICE		
3.6.3		PERFORM D/L COMM AMONG FRIENDLESS		
3.6.4		SET EMCON		
3.6.5		PERFORM SATCOM		
3.6.6		SET CIT MODES AND CODES		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
4.0		INTERCEPT		
4.1		AVIATE		
4.1.1	YES	CONTROL AIRCRAFT	1	II
4.1.2	YES	SELECT PILOT RELIEF MODE	3	I
4.1.3		ARM WEAPONS		
4.1.4		MONITOR WEAPONS STATUS		
4.1.5		MAINTAIN FORMATION		
4.1.6		MONITOR SYSTEMS STATUS		
4.1.7	YES	ANALYZE TACTICAL SITUATION	2	II
4.1.8		MONITOR FUEL STATUS		
4.1.9	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	2	II
4.2		RESPONSE TO THREAT		
4.2.1		MONITOR THREAT DETECTION SYSTEMS		
4.2.2	YES	DETERMINE THREAT DEGREE	1	I
4.2.3	YES	DETERMINE IMMINENCE OF THREAT	1	I
4.2.4	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
4.2.5		PERFORM THREAT RESPONSE		
4.3		COORDINATED SENSOR ACTIVITIES		
4.3.1	YES	OPERATE SENSORS	2	I
4.3.2		CORRELATE ON-BOARD SENSOR DATA/ INFORMATION		
4.3.3		CORRELATE EXTERNAL DATA WITH ON-BOARD DATA/INFORMATION		
4.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	1	II

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
4.4		RAID ASSESSMENT (SORTING)		
4.4.1		PERFORM TARGET SEARCH/DETECTION		
4.4.2		PERFORM TARGET ACQUISITION		
4.4.3		PERFORM TARGET IDENTIFICATION/CLASSIFI- CATION		
4.4.4	YES	ASSESS RAID (POSITION, COUNT, TRACK, INTENT)	1	II
4.4.5	YES	DETERMINE TARGET ASSIGNMENTS	3	II
4.4.6	YES	DETERMINE PRELIMINARY TARGETING	3	I
4.4.7	YES	DETERMINE DYNAMIC GEOMETRY MANEUVERS REQUIRED	2	II
4.4.8		PERFORM DYNAMIC GEOMETRY MANEUVERS		
4.5		NAVIGATE		
4.5.1		MONITOR POSITION		
4.5.2		MONITOR COURSE		
4.5.3		MONITOR SPEED		
4.5.4		MONITOR ALTITUDE		
4.6		COMMUNICATE		
4.6.1		COMMUNICATE CLEAR VOICE		
4.6.2		COMMUNICATE SECURE VOICE		
4.6.3		PERFORM D/L COMM W/ FRIENDLIES		
4.6.4	YES	SET EMCON	5	I
4.6.5		PERFORM SATCOM		
4.6.6		SET CIT MODES AND CODES		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
5.0		ATTACK		
5.1		AVIATE		
5.1.1	YES	CONTROL AIRCRAFT	1	II
5.1.2	YES	SELECT PILOT RELIEF MODE	3	I
5.1.3		MAINTAIN MUTUAL SUPPORT, AS REQUIRED		
5.1.4		MONITOR WEAPONS STATUS		
5.1.5	YES	ANALYZE TACTICAL SITUATION	2	II
5.1.6		MONITOR FUEL STATUS		
5.1.7	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	2	II
5.1.8		ANALYZE DISENGAGEMENT CRITERIA	3	II
5.1.9		PERFORM DISENGAGEMENT MANEUVER(S)		
5.2		RESPONSE TO THREAT		
5.2.1		MONITOR THREAT DETECTION SYSTEMS		
5.2.2	YES	DETERMINE THREAT DEGREE	1	I
5.2.3	YES	DETERMINE IMMINENCE OF THREAT	1	I
5.2.4	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
5.2.5		PERFORM THREAT RESPONSE		
5.3		COORDINATED SENSOR ACTIVITIES		
5.3.1	YES	OPERATE SENSORS	2	I
5.3.2		CORRELATE ON-BOARD SENSOR DATA/ INFORMATION		
5.3.3		CORRELATE EXTERNAL DATA WITH ON-BOARD DATA/INFORMATION		
5.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	1	I

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
5.4		FINAL TARGETING		
5.4.1	YES	DETERMINE DYNAMIC GEOMETRY MANEUVERS REQUIRED	1	II
5.4.2		PERFORM DYNAMIC GEOMETRY MANEUVERS		
5.4.3		COMPLY WITH TARGETING ASSIGNMENTS		
5.4.4	YES	SELECT WEAPONRY	1	II
5.5		WEAPON DELIVERY		
5.5.1		SELECT WEAPON/WEAPON MODE		
5.5.2	YES	COMMIT WEAPON(S)	1	II
5.5.3		EXECUTE POST-LAUNCH MANEUVER, AS DESIRED		
5.5.4		PROVIDE WEAPON STEERING DATA/ILLUMINATION		
5.6		DAMAGE ASSESSMENT		
5.6.1	YES	DETERMINE TARGET DAMAGE	4	II
5.6.2	YES	ASSESS RE-ATTACK OPTIONS	2	II
5.6.3		EXECUTE RE-ATTACK, AS REQUIRED		
5.7		NAVIGATE		
5.7.1		MONITOR POSITION		
5.7.2		MONITOR COURSE		
5.7.3		MONITOR SPEED		
5.7.4		MONITOR ALTITUDE		
5.8		COMMUNICATE		
5.8.1		COMMUNICATE CLEAR VOICE		
5.8.2		COMMUNICATE SECURE VOICE		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
5.8.3	YES	PERFORM D/L COMM W/ FRIENDLIES	5	I
5.8.4		SET EMCON		
5.8.5		PERFORM SATCOM		
5.8.6		SET CIT MODES AND CODES		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
6.0		RETURN TO FORCE		
6.1		AVIATE		
6.1.1	YES	CONTROL AIRCRAFT	1	II
6.1.2	YES	SELECT PILOT RELIEF MODE	4	I
6.1.3		MONITOR SYSTEM STATUS		
6.1.4	YES	SET FORMATION	5	I
6.1.5		MONITOR FUEL STATUS		
6.1.6	YES	DETERMINE FREQUENCY OF VISUAL SEARCH	4	II
6.1.7		SAFE WEAPONS		
6.1.8		EXECUTE RETURN TO FORCE PROCEDURES		
6.2		AERIAL REFUELING		
6.2.1		CONFIGURE AIRCRAFT		
6.2.2		PERFORM PLUG-IN		
6.2.3		TAKE FUEL ON-BOARD AND MONITOR FUEL STATUS		
6.2.4		MONITOR SYSTEMS STATUS		
6.2.5		MONITOR COMM		
6.2.6		DISENGAGE REFUELING		
6.2.7		RECONFIGURE AIRCRAFT		
6.3		NAVIGATE		
6.3.1		MONITOR POSITION		
6.3.2		MONITOR COURSE		
6.3.3		MONITOR SPEED		
6.3.4		MONITOR ALTITUDE		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
6.3.5	YES	COMPUTE ETA	5	II
6.3.6		COMPARE PRESENT STATUS AND ESTIMATES TO PLAN		
6.3.7		ADJUST FLIGHT PLAN, AS REQUIRED		
6.4	YES	COMMUNICATE	5	I
6.4.1		COMMUNICATE CLEAR VOICE		
6.4.2		COMMUNICATE SECURE VOICE		
6.4.3		PERFORM D/L COMM AMONG FRIENDLIES		
6.4.4		PERFORM SATCOM		
6.4.5		PERFORM EMCON		
6.4.6		SET CIT MODES AND CODES		

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.0		RECOVERY		
7.1		AVIATE		
7.1.1		PERFORM PENETRATION CHECKLIST		
7.1.2	YES	SELECT PILOT RELIEF MODE	3	I
7.1.3		SAFE WEAPONS		
7.1.4		MONITOR THREAT DETECTION SYSTEMS		
7.1.5	YES	PERFORM AIRCRAFT DESCENT	1	II
7.1.6	YES	INTERPRET MULTI-SENSOR CORRELATION DATA	3	II
7.1.7		MONITOR SYSTEM STATUS		
7.1.8		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
7.1.9	YES	PERFORM FUEL DUMP, AS REQUIRED	4	II
7.1.10	YES	PERFORM APPROACH/PATTERN ENTRY	1	II
7.1.11		CONFIGURE AIRCRAFT FOR LANDING		
7.1.12		PERFORM LANDING CHECKLIST		
7.1.13	YES	PERFORM LANDING	1	II
7.1.14	YES	DETERMINE REQUIREMENT FOR MISSED APPROACH/WAVE-OFF	1	II
7.1.15		PERFORM BOLTER/MISSED APPROACH/WAVE- OFF (AS REQUIRED)		
7.2		NAVIGATE		
7.2.1		MONITOR POSITION		
7.2.2		MONITOR COURSE		
7.2.3		MONITOR SPEED		
7.2.4		MONITOR ALTITUDE		
7.2.5	YES	COMPLY WITH CLEARANCE/INSTRUCTIONS	3	I

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	DECISION REQ'T	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.3	YES	COMMUNICATE	5	I
7.3.1		COMMUNICATE CLEAR VOICE		
7.3.2		COMMUNICATE SECURE VOICE		
7.3.3		PERFORM D/L COMM AMONG FRIENDLIES		
7.3.4		SET EMCON		
7.3.5		SET CIT MODES AND CODES		
7.4		ON DECK		
7.4.1		TAXI CLEAR		
7.4.2		PARK AIRCRAFT		
7.4.3		PERFORM SHUT DOWN CHECKLIST		
7.4.4		RECORD APPLICABLE DATA		
7.4.5		SECURE AIRCRAFT		

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PHASE: PRE-FLIGHT (1.0)
SEGMENT: TAXI (1.3)
DECISION: Set EMCON (1.3.6)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status
10. Laser activity status

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PHASE: TAKE-OFF (2.0)
SEGMENT: ON DECK (2.1)
DECISION: Determine preparedness for flight (2.1.4)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. Go
2. Abort
3. Alter standards
4. Delay decision

INFORMATION REQUIREMENTS:

1. ATC clearance/instruction
2. Checklist results
3. Meteorological conditions (present)
4. Meteorological conditions - enroute
5. Meteorological conditions - target
6. System status
7. Flight warnings/cautions/advisories
8. Criticality of flight/mission
9. Flight member status
10. Tanker/support aircraft status
11. Threat condition
12. Launch window (time remaining)
13. Flight member visual check
14. Final checker results
15. Fuel weight board accuracy
16. Catapult officers readiness/assurance
17. Type catapult shot (i.e., mil/max)
18. Vector off catapult
19. End speed

PHASE: TAKE-OFF(2.0)
SEGMENT: AVIATE (2.2)
DECISION: Establish Aircraft Flight Attitude/Power (2.2.3)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. End speed
2. Rotation attitude
3. Landing gear position/transition
4. Flap position/transition
5. Fuel transfer initiated/transferring
6. Vertical velocity
7. Altitude (AGL/MSL)
8. Airspeed
9. Heading
10. Standard/non-standard departure (visual)
11. Standard instrument departure
12. Engine performance
13. Hydraulic status
14. Pneumatic status
15. Flight warnings/cautions/advisories
16. Ejection system status
17. External stores integrity
18. Flight control system operability
19. Angle of attack
20. Local barometric pressure
21. Altimeter barometric pressure setting
22. Optimum climb profile

PHASE: TAKE-OFF (2.0)
SEGMENT: AVIATE (2.2)
DECISION: Analyze GO/NO-GO criteria (2.2.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:
1. Engine performance
2. Flight control system operability
3. System performance
4. External stores integrity
5. Directive instructions
6. Flight warnings/cautions/advisories

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PHASE: TAKEOFF (2.0)
SEGMENT: COMMUNICATE (2.4)
DECISION: Set EMCON (2.4.3)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status
10. Laser activity status

PHASE: DASH OUT (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Control aircraft, etc. (3.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Clear of traffic/obstacles
7. System status
8. Flight warnings/cautions/advisories
9. Navigation compliance cues
10. Optimum airspeed
11. Optimum heading
12. Threat condition
13. Local barometric pressure
14. Altimeter barometric pressure setting
15. Low airspeed cue
16. High angle of attack cue

PHASE: DASH OUT (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Select pilot relief mode (3.1.2)
DECISION TYPE: 1
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

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PHASE: DASH OUT (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Analyze GO/NO-GO Criteria (3.1.4)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:

1. Engine performance
2. Flight control system operability
3. System performance
4. External stores integrity
5. Directive instructions
6. Flight warnings/cautions/advisories

PHASE: DASH OUT (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Analyze tactical situation (3.1.5)
DECISION TYPE: II
CRITICALITY 5

INFORMATION REQUIREMENTS:

1. System status - vehicle
2. System status - avionics
3. System status - WCS
4. System status - weapons
5. Weapons inventory/PK
6. Ownship flight envelope
7. Threat imminence
8. Threat degree
9. Meteorological conditions (present)
10. Own force support availability
11. Anticipated mission profile
12. Anticipated threat
13. Fuel state
14. Fuel flow
15. Bingo fuel
16. Bugout fuel state
17. Tanker availability/position/give
18. Relative and geographic position of CV/HVU
19. Position of ownforce air defense platforms

PHASE: DASH OUT (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Interpret Weapons Status Reports (3.1.8)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Weapon armed and ready
2. Weapon armed but not ready
3. Weapon safe
4. Weapon hung
5. Weapon failed
6. Weapon locked/unlocked
7. Weapon degraded
8. Weapon not communicating with mission computer

INFORMATION REQUIREMENTS:

1. Weapons onboard - type/model
2. Weapons onboard - location
3. Weapons onboard - quantity each location
4. Weapons launch modes available
5. Weapons launch mode selected
6. Master mode selected
7. Weapon selected
8. Weapon initialization data preplanned
9. Weapon initialization data received by weapon
10. Weapon prep data availability
11. Weapon prep data receipt by weapon
12. Interval selected (for multiple releases)
13. Minimum interval allowable
14. Arming options available
15. Arming option selected
16. Fuzing options available
17. Fuzing option selected
18. Quantity selected per interval (for multiple release)
19. Weapon auto gain control status (if applicable)
20. Weapon threat library selected (if applicable)
21. Weapon target type priority selected (if applicable)
22. Terminal guidance option selected

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PHASE: DASH OUT (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Determine frequency of visual search (3.1.10)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain proximity
5. Formation maneuvering requirements
6. Wingman position (if applicable)

PHASE: DASH OUT (3.0)
SEGMENT: RESPONSE TO THREAT (3.2)
DECISION: Determine threat degree (3.2.3)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Availability of ownforce support - ECM
5. Availability of ownforce support - weapon
6. Altitude (AGL/MSL)
7. Airspeed
8. Availability of onboard countermeasures (type and no.)
9. Capability of onboard countermeasures
10. TMDS status
11. PELTS status

PHASE: DASH OUT (3.0)
SEGMENT: RESPONSE TO THREAT (3.2)
DECISION: Determine imminence of threat (3.2.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Topography along route of flight
8. Presence of RF energy radiating along route of flight
9. Presence of laser energy along route of flight
10. Automatic threat avoidance system status
11. Auto threat avoidance system selection/disable
12. Threat guidance phase (i.e., terminal, mid-course, etc.)
13. Threat knowledge of ownship presence

PHASE: DASH OUT (3.0)
SEGMENT: RESPONSE TO THREAT (3.2)
DECISION: Determine to avoid, suppress, or intercept (3.2.5)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Threat degree
3. Threat imminence
4. Threat position
5. Threat formation/tactics
6. Threat capabilities (airframe/sensors/weapons)
7. Effect of avoidance on anti-bomber mission geometry
8. Effect of intercept/suppression on anti-bomber launch opportunities
9. Availability/effectiveness of self protection jamming
10. Fuel state
11. Weapons inventory
12. System status
13. Airspeed
14. Altitude (AGL/MSL)
15. Bingo fuel
16. Bugout fuel state

PHASE: DASH OUT (3.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (3.3)
DECISION: Select sensor modes (3.3.1)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. On-all passive
2. On-All Active
3. On-all LPI
4. On-auto mode optimization
5. On-preplanned initialization
6. Off
7. Standby

INFORMATION REQUIREMENTS:

1. Sensor modes/submodes available
2. Sensor modes/submodes selected
3. Sensor modes most suitable
4. Bistatic radar file track potential (as receiver)
5. Bistatic NCTR potential (as received)
6. Bistatic radar potential (as emitter)
7. Equivalent illumination/luminance levels
8. Individual sensor status
9. Auto mode optimization engaged/rejected
10. Preplanned initialization selected
11. Sensor boresight status
12. Individual sensor FOV/FOR available/selected
13. Individual sensor magnification available/selected
14. Individual sensor track mode available/selected
15. Individual sensor autotarget acquisition available/selected
16. Target type anticipated
17. Target location anticipated
18. TKBS status
19. Threat imminence
20. Sensor threat library selected
21. Sensor correlation for display selected/available
22. Display information reject level(s) available/selected
23. Sensor footprint (individual)
24. Sensor footprint (suite)
25. Data link status
26. System status
27. Auto hand-off to weapon(s) available/selected
28. Sensor to sensor cueing available/selected
29. Sensor self-protect mode(s) available/selected

PHASE: DASH OUT (3.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (3.3)
DECISION: Operate sensors (3.3.2)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: DASH OUT (3.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (3.3)
DECISION: Interpret sensor data/information (3.3.5)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Target(s) cueing
2. Attitude
3. Highest threat target(s) – priority
4. Preplanned target data
5. Coincidence of multiple sensor target designation
6. Bearing/distance/rate of multi-sensor designation error
7. Ownship position
8. Onboard obtained positional information
9. Individual sensor status
10. Externally provided targeting information
11. Directive instructions
12. On-call uncorrelated processed individual sensor data/information
13. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
14. Threat imminence
15. Threat degree
16. Recommended action(s) to counter threat
17. Imminent catastrophic event warning (i.e. ground warning, missile/bullet impact, etc.)
18. Target attrition
19. Stationing compliance
20. Inflight mission planning information
21. Flight member status
22. Externally provided intelligence information
23. Spatial orientation imagery
24. Spatial orientation graphics
25. Confidence level of presented data

PHASE: DASH OUT (3.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (3.4)
DECISION: Perform target acquisition(3.4.2)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. Utilize active sensor(s) only
2. Utilize passive sensor(s) only
3. Utilize onboard smart weapons
4. Utilize combination of active and passive sensors
5. Utilize external source targeting information
6. Utilize navigation system
7. Utilize visual scan
8. Utilize automatic acquisition system

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Sensor image prediction
3. Actual sensor image
4. Perspective view (anticipated)
5. Actual perspective view
6. Elapsed time/time to go
7. Distance to target
8. Ownship position
9. Target location
10. Target cueing (sensor to sensor)
11. Sensor footprint (individual)
12. Individual sensor status
13. Weapons(s) status
14. Weapons delivery system status
15. Target cueing (sensor/navigation system to eyeball)
16. Anticipated target signature
17. Source of externally provided targeting information
18. Accuracy of externally provided targeting information
19. Coincidence of multiple sensor target area localization
20. Bearing/distance/rate of multi-sensor localization error
21. Weapon selected
22. Weapon mode selected
23. Meteorological conditions (present)
24. Threat knowledge of ownship presence
25. Individual sensor FOV/FOR available/selected
26. Individual sensor magnification available/selected
27. Individual sensor auto target acquisition available/selected
28. Data link status
29. System status
30. Weapons system master mode
31. Navigation system/sensor correlation/error
32. Indication of automatic acquisition requirement
33. Specific targets acquired by other flight members
34. Specific targets assigned to/by other flight members
35. Specific targets assigned to/by ground/control elements

PHASE: DASH OUT (3.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (3.4)
DECISION: Perform target identification/classification (3.4.3)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Yes – that is my target
2. No – that is not my target
3. Delay decision

INFORMATION REQUIREMENTS:

1. Automatic target recognition system decision/confidence level
2. NCTR/PNCTR decision
3. External source verification of initial identification
4. PELTS decision/confidence level
5. Sensor image prediction
6. Target location
8. Weapons delivery system status
9. Target shape, signature, albedo
10. Expected target shape, signature, albedo for comparison
11. Indication of auto target acquisition and NATO identification

PHASE: DASH OUT (3.0)
SEGMENT: NAVIGATE (3.5)
DECISION: Determine appropriate defensive grid position (3.5.5)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Proceed to position assigned by controlling agency
2. Autonomously fill vacant position IAW doctrine
3. Fill station IAW on-scene direction (non-AEW)
4. Do not proceed to any station – anchor
5. Do not proceed to any station – unilateral contact investigation
6. Delay decision

INFORMATION REQUIREMENTS:

1. Ownship position
2. Ownship position validity/verification
3. Grid reference position – VL (x,y,z)
4. Threat axis
5. Grid reference bearing
6. Grid reference distance
7. Number of defensive grid positions
8. Position of defensive grid positions
9. Status of defensive grid positions (filled/vacant)
10. Position/assignment of other ownforce members
11. Systems performance of other ownforce members
12. Ownship position assignment (if any)
13. Position of ownforce fighter with lowest fuel state
14. Defensive grid area meteorological conditions
15. Imminence of engagement
16. Directive instructions
17. Presence of unidentified contacts
18. Combat readiness states of ownforce members
19. Optimum routing
20. Threat condition
21. Time on station
22. ROE
23. Bingo/bugout plan
24. Contrail level
25. System status

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PHASE: DASH OUT (3.0)
SEGMENT: NAVIGATE (3.5)
DECISION: Perform navigation system update (3.5.6)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Visual check acceptable (within tolerance)
2. System check – accept
3. System check – reject

INFORMATION REQUIREMENTS:

1. Visual position
2. INS position
3. GPS position
4. TRN position
5. X/Y position of given (selected) points
6. Computed distance error
7. Computed direction of error
8. Drift rate (distance/unit of time)
9. Sensor selected for update (radar, fly over (human eye), HUD, TACAN, etc.)
10. System acceptance of accept/reject decision
11. Auto advisory that navigation system is in need of update [i.e., drift rate interlock – or – auto multi-sensor correlation] or is being updated
12. Assurance that designated position is same as x/y position (i.e., navigation and sensor both referencing same point)

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PHASE: DASH OUT (3.0)
SEGMENT: COMMUNICATE (3.6)
DECISION: Set EMCON (3.6.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status
10. Laser activity status

PHASE: INTERCEPT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Control aircraft (4.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Clear of traffic/obstacles
7. System status
8. Flight warnings/cautions/advisories
9. Navigation compliance cues
10. Optimum airspeed
11. Optimum heading
12. Threat condition
13. Local barometric pressure
14. Altimeter barometric pressure setting
15. Low airspeed cue
16. High angle of attack cue
17. High yaw rate cue
18. Spin recovery response required
19. Present G
20. Max G

PHASE: INTERCEPT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Select pilot relief mode (4.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:
1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple - External
8. Couple - auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: INTERCEPT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Analyze tactical situation (4.1.7)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. System status
2. Weapons inventory
3. Ownship aerodynamic capabilities/limits
4. Imminence of combat
5. Meteorological conditions (present)
6. Presence/absence of flight member
7. Flight member position
8. Anticipated threat
9. Fuel state
10. Fuel flow
11. Combat package
12. Bingo fuel
13. Tanker availability/position/give
14. CV/HVU position
15. Station position
16. Position of ownforce air defense platforms
17. Presence of AEW support
18. Quality of AEW support
19. Bugout fuel state
20. Weapon footprint
21. Sensor footprint (individual)

PHASE: INTERCEPT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Determine frequency of visual search (4.1.9)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain proximity
5. Formation maneuvering requirements
6. Position of wingman

PHASE: INTERCEPT (4.0)
SEGMENT: RESPONSE TO THREAT (4.2)
DECISION: Determine threat degree (4.2.2)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Availability of ownforce support - ECM
5. Availability of ownforce support - weapon
6. Altitude (AGL/MSL)
7. Airspeed
8. Availability of onboard countermeasures (type and no.)
9. Capability of onboard countermeasures
10. TMDS status
11. PELTS status

PHASE: INTERCEPT (4.0)
SEGMENT: RESPONSE TO THREAT (4.2)
DECISION: Determine imminence of threat (4.2.3)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Presence of RF energy radiating along route of flight
8. Presence of laser energy along route of flight
9. Automatic threat avoidance system status
10. Auto threat avoidance system selection/disable
11. Threat guidance phase (i.e., terminal, mid-course, etc.)

PHASE: INTERCEPT (4.0)
SEGMENT: RESPONSE TO THREAT (4.2)
DECISION: Determine to avoid or suppress (4.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Threat degree
3. Threat imminence
4. Threat position
5. Threat formation/tactics
6. Threat capabilities (airframe/sensors/weapons)
7. Effect of avoidance on anti-bomber mission geometry
8. Effect of intercept/suppression on anti-bomber launch opportunities
9. Availability/effectiveness of self protection jamming
10. Fuel state
11. System status
12. Weapons inventory
13. Airspeed
14. Altitude (AGL/MSL)
15. Bingo fuel
16. Bugout fuel state

PHASE: INTERCEPT (4.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (4.3)
DECISION: Operate sensors (4.3.1)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES: 1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: INTERCEPT (4.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (4.3)
DECISION: Interpret sensor data/information (4.3.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Target(s) cueing
2. Attitude
3. Highest threat target(s) – priority
4. Preplanned target data
5. Coincidence of multiple sensor target designation
6. Bearing/distance/rate of multi-sensor designation error
7. Ownship position
8. Onboard obtained positional information
9. Individual sensor status
10. Externally provided targeting information
11. Directive instructions
12. On-call uncorrelated processed individual sensor data/information
13. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
14. Threat imminence
15. Threat degree
16. Recommended action(s) to counter threat
17. Imminent catastrophic event warning (i.e. ground warning, missile/bullet impact, etc.)
18. Target attrition
19. Stationing compliance
20. Inflight mission planning information
21. Flight member status
22. Externally provided intelligence information
23. Spatial orientation imagery
24. Spatial orientation graphics
25. Confidence level of presented data

PHASE: INTERCEPT (4.0)
SEGMENT: RAID ASSESSMENT (SORTING) (4.4)
DECISION: Assess raid (position, count, track, intent) (4.4.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Position of raid
2. Ownship position
3. Position of defended unit
4. Sensor status
5. Sensor sensitivity
6. Range of raid from ownship
7. Type of ECM employed by threat
8. Sensor determined raid count
9. Sensor determined raid track
10. Sensor correlation of raid count
11. Sensor correlation of raid track
12. Threat raid doctrine
13. Number of threat platforms/weapons per platform (surface/airborne)
14. Identification of threat platforms in raid

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PHASE: INTERCEPT (4.0)
SEGMENT: RAID ASSESSMENT (4.4)
DECISION: Determine target assignments (4.4.5)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Ownship status – weapons
2. Ownship status – systems
3. Ownship status – sensors
4. Flight member – weapons
5. Flight member – systems
6. Flight member – sensors
7. Position of raid
8. Optimum attack geometry
9. Pre-briefed doctrine
10. Ownship weapon footprint
11. Flight member weapon footprint
12. Threat weapon footprint
13. CV/HVU position
14. Fuel state
15. Flight member fuel status
16. Threat time to first launch opportunity

PHASE: INTERCEPT (4.0)
SEGMENT: RAID ASSESSMENT (SORTING) (4.4)
DECISION: Determine preliminary targeting (4.4.6)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Sort by range
2. Sort by altitude
3. Sort by left/right
4. Sort according to weapons remaining
5. Sort by V_c
6. Sort by threat capability

INFORMATION REQUIREMENTS:

1. Number of threat platforms/weapons per platform (surface/airborne)
2. Identification of threat platforms in raid
3. Raid formation
4. Status of sensors – ownship
5. Status of sensor – flight member
6. Status of weapons systems – ownship
7. Status of weapons systems – flight member
8. Weapons inventory
9. Weapons inventory – flight member
10. Position of aircraft being tracked by flight member
11. Flight member position
12. Relative position of other ownforce aircraft
13. Directive instructions
14. Threat speed
15. Rate of closure
16. Threat type identification
17. Real time range capability of threat weapons
18. Threat condition
19. Weapon employment restriction(s) in effect (i.e. hold, tight, free)

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PHASE: INTERCEPT (4.0)
SEGMENT: RAID ASSESSMENT (4.4)
DECISION: Determine dynamic geometry maneuvers required (4.4.7)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Ownship position
2. Flight member position
3. Weapons inventory
4. Weapons inventory – flight member
5. WCS status – ownship
6. WCS status – flight member
7. Fuel state – ownship
8. Fuel state – flight member
9. CV/HVU position
10. Weapons footprint – ownship [by weapon]
11. Weapons footprint – flight member [by weapon]
12. Sensor footprint (individual)
13. Sensor footprint – flight member
14. Threat – platform type
15. Threat – platform count
16. Threat – possible weapon footprint
17. Threat – formation
18. Threat position
19. Time to threat entry into weapon footprint – ownship
20. Time to CV/HVU entry into weapon footprint – threat
21. Weapon selected
22. Optimum intercept course – ownship (for present speed)
23. Threat optimum intercept course against ownship (for present speed)
24. Airspeed
25. Heading – ownship to individual threat platforms
26. Threat speed
27. Rate of closure
28. Heading – threat
29. TKBS designated threat platform engagement priority sequence
30. TKBS designated optimum ownship attack profile to maximize raid attrition
31. Threat condition
32. Real time range capability of threat weapons

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PHASE: INTERCEPT (4.0)
SEGMENT: COMMUNICATE (4.6)
DECISION: Set EMCON (4.6.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status
10. Laser activity status

PHASE: ATTACK (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Control aircraft operation and flight (5.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Sideslip
14. Optimum airspeed
15. Optimum vertical velocity
16. Optimum heading
17. Local barometric pressure
18. Altimeter barometric pressure setting
19. Low airspeed cue
20. High angle of attack cue
21. Optimum attack profile
22. High yaw rate cue
23. Spin recovery response required
24. Present G
25. Max G

PHASE: ATTACK (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Select pilot relief mode (5.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple - External
8. Couple - auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: ATTACK (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Analyze tactical situation (5.1.5)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. System status – vehicle
2. System status – avionics
3. System status – WCS
4. System status – weapons
5. Weapons inventory/PK
6. Ownship flight envelope
7. Threat imminence
8. Threat degree
9. Meteorological conditions (present)
10. Own force support availability
11. Anticipated mission profile
12. Anticipated threat
13. Fuel state
14. Fuel flow
15. Bingo fuel
16. Bugout fuel state
17. CV/HVU position
18. Position of ownforce air defense platforms
19. Tanker availability/position/give

PHASE: ATTACK (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Determine frequency of visual search (5.1.7)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain proximity
5. Formation maneuvering requirements
6. Position of wingman

PHASE: ATTACK (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Analyze disengagement criteria (5.1.8)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Bingo fuel
2. Bugout fuel state
3. Bugout heading
4. Present fuel
5. Ownship position
6. Tactical viability of continued engagement
7. Flight member position
8. Flight member's posture (offensive/defensive)
9. Flight member fuel status
10. Energy state – ownship
11. Energy state – flight member
12. Weapons inventory
13. Weapons inventory – flight member
14. System status
15. Number of threat aircraft in raid
16. Relative position of high value targets
17. Effects of delayed disengagement on prosecution of high value targets
18. Position of other high value threat platforms

PHASE: ATTACK (5.0)
SEGMENT: RESPONSE TO THREAT (5.2)
DECISION: Determine threat degree (5.2.2)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number and threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Availability of ownforce support - ECM
5. Availability of ownforce support - weapon
6. Altitude (AGL/MSL)
7. Airspeed
8. Availability of onboard countermeasures (type and no.)
9. Capability of onboard countermeasures
10. TMDS status
11. PELTS status

PHASE: ATTACK (5.0)
SEGMENT: RESPONSE TO THREAT (5.2)
DECISION: Determine imminence of threat (5.2.3)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Topography along route of flight
8. Presence of RF energy radiating along route of flight
9. Presence of laser energy along route of flight
10. Automatic threat avoidance system status
11. Auto threat avoidance system selection/disable
12. Threat guidance phase (i.e., terminal, mid-course, etc.)
13. Threat knowledge of ownship presence

PHASE: ATTACK (5.0)
SEGMENT: RESPONSE TO THREAT (5.2)
DECISION: Determine to avoid or suppress (5.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Threat degree
3. Threat imminence
4. Threat position
5. Threat formation/tactics
6. Threat capabilities (airframe/sensors/weapons)
7. Effect of avoidance on anti-bomber mission geometry
8. Effect of intercept/suppression on anti-bomber launch opportunities
9. Availability/effectiveness of self protection jamming
10. Fuel state
11. System status
12. Weapons inventory
13. Airspeed
14. Altitude (AGL/MSL)
15. Bingo fuel
16. Bugout fuel state

PHASE: ATTACK (5.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (5.3)
DECISION: Operate sensors (5.3.1)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: ATTACK (5.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (5.3)
DECISION: Interpret sensor data/information (5.3.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Target(s) cueing
2. Attitude
3. Highest threat target(s) – priority
4. Preplanned target data
5. Coincidence of multiple sensor target designation
6. Bearing/distance/rate of multi-sensor designation error
7. Ownship position
8. Onboard obtained positional information
9. Individual sensor status
10. Externally provided targeting information
11. Directive instructions
12. On-call uncorrelated processed individual sensor data/information
13. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
14. Threat imminence
15. Threat degree
16. Recommended action(s) to counter threat
17. Imminent catastrophic event warning (i.e. ground warning, missile/bullet impact, etc.)
18. Target attrition
19. Stationing compliance
20. Inflight mission planning information
21. Flight member status
22. Externally provided intelligence information
23. Spatial orientation imagery
24. Spatial orientation graphics
25. Confidence level of presented data

PHASE: ATTACK (5.0)
SEGMENT: FINAL TARGETING (5.4)
DECISION: Determine dynamic geometry maneuvers required (5.4.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Ownship position
2. Flight member position
3. Weapons inventory
4. Weapons inventory – flight member
5. WCS status – ownship
6. WCS status – flight member
7. Fuel state – ownship
8. Fuel state – flight member
9. CV/HVU position
10. Weapons footprint – ownship [by weapon]
11. Weapons footprint – flight member [by weapon]
12. Sensor footprint (individual)
13. Sensor footprint – flight member
14. Threat – platform type
15. Threat – platform count
16. Threat – possible weapon footprint
17. Threat – formation
18. Threat position
19. Time to threat entry into weapon footprint – ownship
20. Time to CV/HVU entry into weapon footprint – threat
21. Weapon selected
22. Optimum intercept course – ownship (for present speed)
23. Threat optimum intercept course against ownship (for present speed)
24. Airspeed
25. Heading – ownship to individual threat platforms
26. Threat speed
27. Heading – threat
28. TKBS designated threat platform engagement priority sequence
29. TKBS designated optimum ownship attack profile to maximize raid attrition

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PHASE: ATTACK (5.0)
SEGMENT: FINAL TARGETING (5.4)
DECISION: Select weaponry (5.4.4)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:

1. Choose AAAM
2. Choose AMRAAM
3. Choose ASRAAM
4. Choose guns
5. Choose automatic selection
6. Choose other (i.e. laser, etc.)

INFORMATION REQUIREMENTS:

1. Range to target
2. Target bearing
3. Target altitude
4. Target speed
5. Target closure
6. Target track crossing angle
7. Target track crossing rate
8. Target aspect angle
9. Target RCS
10. Target IR signature
11. Target ECM
12. Weapons' inventory
13. Weapons' status
14. Weapon's PK against target

PHASE: ATTACK (5.0)
SEGMENT: WEAPON DELIVERY (5.5)
DECISION: Commit weapon (5.5.2)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:

1. Automatic execution
2. Manual execution at maximum range – computer solution
3. Manual execution at minimum range – computer solution
4. Manual execution at heart of envelop – computer solution
5. Manual execution at preplanned point – manual solution

INFORMATION REQUIREMENTS:

1. Delivery mode selected
2. Flight path to release point
3. Precise instant for manual release (shoot cue)
4. Execution accomplishment indication
5. Munition time of flight
6. Automatic mode weapons delivery solution indication (cueing)
7. CCIP/CCRP mode weapons delivery solution indication (cueing)
8. Slant range
9. Target altitude
10. Horizontal range
11. Altitude (AGL/MSL)
12. True airspeed
13. Attitude
14. Flight path
15. Standby (to release) cue
16. G-loading
17. Angle of attack
18. Threat imminence
19. Threat degree
20. Directive instructions
21. Threat knowledge of ownship presence
22. Automatic target attack system engagement indication
23. Target heading
24. Target speed
25. Target aspect angle

PHASE: ATTACK (5.0)
SEGMENT: DAMAGE ASSESSMENT (5.6)
DECISION: Determine target damage (5.6.1)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Loss of / change in target RF emission
2. Loss of / change in target IR emission
3. Sensor derived target return – presence/absence
4. Target position (x,y,z) - last detection
5. Target position (x,y,z) - extrapolated for current time
6. Target heading
7. Target speed
8. Sensor footprint (individual)

DECK LAUNCHED INTERCEPT

PHASE: ATTACK (5.0)
SEGMENT: DAMAGE ASSESSMENT (5.6)
DECISION: Assess reattack options (5.6.2)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Target position
2. Target heading
3. Target speed
4. Target RF emissions
5. Ownship big picture relationships (other threat ASM platforms, other threat escorts, friendly forces, etc.)
6. Ownship weapons inventory/status
7. Fuel state
8. Fuel flow
9. Bugout fuel state
10. Bingo fuel state
11. Target priorities
12. Directive instructions

PHASE: ATTACK (5.0)
SEGMENT: COMMUNICATE (5.8)
DECISION: Set EMCON (5.8.4)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:
1.Total EMCON
2.No EMCON - Emissions free
3.Comm tight - sensors free
4.Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status
10. Laser activity status

PHASE: RETURN TO FORCE (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Control aircraft (6.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Clear of traffic/obstacles
7. System status
8. Flight warnings/cautions/advisories
9. Navigation compliance cues
10. Optimum airspeed
11. Optimum heading
12. Threat condition
13. Local barometric pressure
14. Altimeter barometric pressure setting
15. Low airspeed cue
16. High angle of attack cue
17. High yaw rate cue
18. Present G
19. Max G

PHASE: RETURN TO FORCE (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Set pilot relief mode (6.1.2)
DECISION TYPE: 1
CRITICALITY: 4
ALTERNATIVES:
1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple - External
8. Couple - auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: RETURN TO FORCE (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Set formation (6.1.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. No formation required

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

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PHASE: RETURN TO FORCE (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Determine frequency of visual search (6.1.6)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Threat detection systems status
2. Threat imminence
3. Threat degree
4. Traffic/terrain proximity
5. Formation maneuvering requirements
6. Position of wingman

PHASE: RETURN TO FORCE (6.0)
SEGMENT: NAVIGATE (6.3)
DECISION: Adjust flight plan, as required (6.3.7)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude – P_s
7. Optimum indicated Mach – P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude – max range
27. Optimum Mach – max range
28. Optimum altitude – max endurance
29. Optimum Mach – max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: RETURN TO FORCE (6.0)
SEGMENT: COMMUNICATE (6.4)
DECISION: Set EMCON (6.4.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status
10. Laser activity status

PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Select pilot relief mode (7.1.2)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Perform aircraft descent (7.1.5)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Heading
4. Angle of attack
5. Vertical velocity
6. Clear of traffic obstacles
7. Engine performance
8. Hydraulic status
9. Pneumatic status
10. Flight warnings/cautions/advisories
11. Navigation compliance cues
12. Optimum airspeed
13. Optimum vertical velocity
14. Optimum heading
15. Local barometric pressure
16. Altimeter barometric pressure setting

PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Interpret multi-sensor correlation data (7.1.7)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Surface proximity
2. Planned ship rendezvous point
3. Ship location
4. Optimum routing
5. Spatial orientation imagery
6. Spatial orientation graphics
7. Cueing to ship
8. Cueing to assigned fix
9. Display format availability
10. Attitude
11. System status
12. Recovery status (extant at ship)
13. Ship's BRC
14. Final approach fix location
15. Final approach heading
16. Coincidence of multi-sensor data
17. Bearing/distance/rate of multi-sensor correlation error
18. Ownship position
19. Directive instructions
20. Externally provided recovery information
21. On-call uncorrelated processed individual sensor data/information
22. Ownship big picture relationships (marshal/recovery sequence, etc.)
23. TKBS recommended action(s) for recovery
24. Inflight mission planning information
25. Flight member status
26. Significant meteorological conditions
27. Self-contained glide slope/path information

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PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Perform fuel dump, as required (7.1.9)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Dump to maximum arrestment weight
2. Dump to minimum fuel required
3. Dump to maximum arrestment weight fuel required for approach
4. Dump to gross weight as directed
5. Do not dump fuel
6. Delay decision

INFORMATION REQUIREMENTS:

1. Fuel aboard – useable quantity
2. Quantity external fuel
3. Fuel aboard – unusable quantity
4. Aircraft weight – basic airframe
5. External stores weight
6. Suspension equipment weight
7. Maximum allowable trap weight
8. Fuel required
9. Tanker availability/position/give
10. Position in recovery order
11. Flight member's position in recovery order
12. Recovery signal
13. Recovery conditions
14. Recovery mode
15. Present boarding rate
16. EMCON condition
17. Fuel reserve (procedural/personal)
18. Number emergency aircraft inbound
19. Nature of emergency for inbound aircraft
20. Fuel flow
21. Maximum delta capability (in minutes)
22. Fuel dump initiated
23. Fuel dump in progress
24. Fuel dump secured
25. Fuel dump ceased
26. Time of day (local/zulu)
27. Ship location
28. Directive instructions
29. Distance to divert landing site
30. Winds aloft
31. Fuel aboard upon arrival at divert landing site

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PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Perform approach/pattern entry (7.1.10)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Vertical velocity
6. Clear of traffic/obstacles
7. Engine performance
8. Hydraulic status
9. Pneumatic status
10. Standard/non-standard recovery
11. Standard instrument recovery
12. Recovery instructions
13. BRC
14. Winds aloft
15. Marshall (departure) information (i.e., push time)
16. Charlie time
17. Time of day (local/zulu)
18. Local barometric pressure
19. Altimeter barometric pressure setting
20. System status
21. Ship's automatic landing system status
22. Automatic landing system couple status
23. Internal glide slope/bearing indicator validity status
24. Ship identification
25. Auto throttle response
26. Auto throttle engagement status
27. Angle of attack
28. Glideslope
29. Line-up
30. Ship location
31. Flight warnings/cautions/advisories
32. Optimum heading
33. CCA guidance
34. Recovery conditions
35. Recovery mode
36. Angle of attack - optimum
37. Recovery signal
38. EMCON condition
39. Landing checks complete
40. Wind over deck

PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Perform landing (7.1.13)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Glidepath - optimum
3. Glidepath - present deviation from optimum
4. Course - optimum
5. Course - present deviation from optimum
6. Vertical velocity
7. Angle of attack - optimum
8. Angle of attack
9. Range to touchdown
10. Altitude (AGL/MSL)
11. Aircraft weight - total
12. Fuel weight
13. Bingo fuel state
14. Acknowledgement of ready deck
15. ATC clearance/instruction
16. BRC
17. Final bearing
18. Significant meteorological conditions at ship
19. Air traffic
20. Landing systems status
21. Tailhook position
22. Tailhook snubber pressure
23. Aircraft control surface configuration
24. Home carrier battle damage

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PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Determine requirement for missed approach/waveoff (7.1.14)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Optimum fly-away profile
3. Optimum fly-away aircraft configuration
4. Angle of attack – optimum
5. Angle of attack – present deviation from optimum
6. Power setting
7. Recovery pattern constraints
8. Tanker availability/position/give
9. Bingo/divert field position (x,y)
10. Optimum bingo profile
11. Air traffic
12. Home carrier battle damage
13. Fuel state
14. Capability to reach bingo landing site

PHASE: RECOVERY (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Comply with clearance instructions (7.2.5)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:
1. Comply strictly with clearance instructions
2. Comply generally with clearance instructions
3. Do not comply
4. Delay decision

INFORMATION REQUIREMENTS:

1. Time of day (local/zulu)
2. Time assigned to be somewhere
3. Location of assigned position (to be)
4. Ship location
5. Ownship position
6. BRC
7. Directive instructions
8. Standard/non-standard recovery
9. Standard instrument recovery
10. Recovery instructions
11. Charlie time
12. Time required to traverse distance to achieve charlie time
13. Delta time
14. Local barometric pressure
15. Altimeter barometric pressure setting
16. Ship identification
17. Winds aloft
18. Wind over deck
19. Glideslope
20. Line-up
21. Angle of attack
22. Flight warnings/cautions/advisories
23. Optimum heading
24. Assigned heading
25. Assigned altitude
26. Assigned airspeed
27. CCA guidance
28. Recovery conditions
29. Recovery mode
30. Recovery signal
31. EMCON condition
32. LSO guidance
33. Optical landing system in use
34. Deck status (ready, fouled, etc.)
35. Capability to comply
36. Wisdom of compliance
37. TKBS recommendation

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PHASE: RECOVERY (7.0)
SEGMENT: COMMUNICATE (7.3)
DECISION: Set EMCON (7.3.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

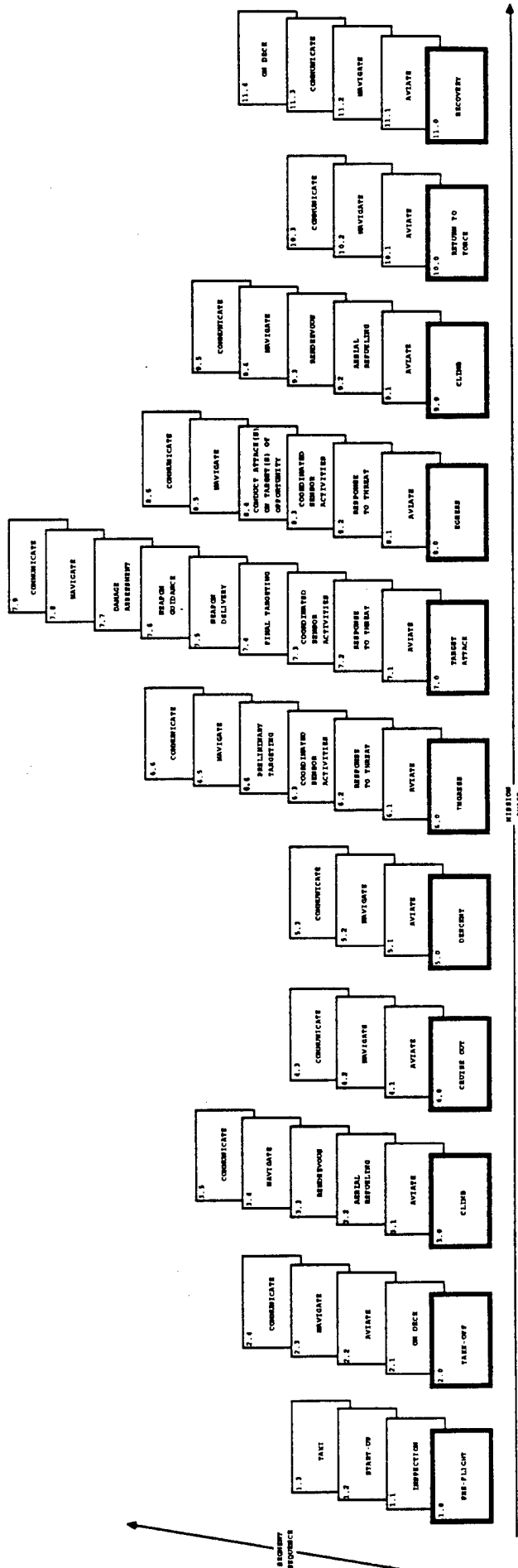
1. Directive instructions
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. Jammer response status
9. CIT response status
10. Laser activity status

APPENDIX C

STRIKE

MISSION TASK/DECISION ANALYSES AND INFORMATION REQUIREMENTS

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
1.0		PRE-FLIGHT		
1.1		INSPECTION		
1.1.1		EXTERNAL INSPECTION		
1.1.2		MAN-UP		
1.1.3		COCKPIT CHECKS		
1.2		START-UP		
1.2.1		PERFORM ENGINE START		
1.2.2		PERFORM AVIONICS START/INITIALIZATION		
1.2.3		INSERT PRE-FLIGHT DATA		
1.2.4		PERFORM WEAPONRY INITIALIZATION		
1.2.5		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
1.3		TAXI		
1.3.1		MONITOR SYSTEMS		
1.3.2		TAXI AIRCRAFT		
1.3.3		CHECK AVIONICS		
1.3.4		COMPLY WITH TAXI DIRECTIONS		
1.3.5		RECEIVE FLIGHT CLEARANCE		
1.3.6	YES	SET EMCON	5	I
1.3.7		EXECUTE COMM CHECKS, IAW EMCON		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
2.0		TAKE-OFF		
2.1		ON DECK		
2.1.1		RECEIVE TAKE-OFF CLEARANCE/INSTRUCTIONS		
2.1.2		PERFORM TAKE-OFF CHECKLIST		
2.1.3		VISUAL CHECK OF FLIGHT MEMBER(S) (IF APPLICABLE)		
2.1.4	YES	DETERMINE PREPAREDNESS FOR FLIGHT	1	I
2.2		AVIATE		
2.2.1		INITIATE TAKE-OFF ROLL/PRESS-UP/CAT SHOT		
2.2.2		MONITOR SYSTEMS STATUS		
2.2.3	YES	ESTABLISH AIRCRAFT FLIGHT ATTITUDE/POWER	1	II
2.2.4	YES	ANALYZE GO/NO-GO CRITERIA	2	I
2.2.5		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
2.3		NAVIGATE		
2.3.1		MONITOR NAV SYSTEM		
2.3.2		COMPLY WITH CLEARANCE/INSTRUCTIONS		
2.4		COMMUNICATE		
2.4.1		COMMUNICATE CLEAR INFORMATION WITH CONTROLLING/OTHER PLATFORMS		
2.4.2		COMMUNICATE SECURE INFORMATION WITH CONTROLLING/OTHER PLATFORMS		
2.4.3	YES	SET EMCON	5	I

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
3.0		CLIMB		
3.1		AVIATE		
3.1.1		ASSUME CLIMB ATTITUDE		
3.1.2	YES	CONTROL AIRCRAFT OPERATION AND FLIGHT	1	II
3.1.3		MONITOR SYSTEMS STATUS		
3.1.4	YES	ANALYZE GO/NO-GO CRITERIA	3	I
3.1.5	YES	SET FORMATION	5	I
3.2		AERIAL REFUELING		
3.2.1		CONFIGURE AIRCRAFT		
3.2.2		PERFORM PLUG-IN		
3.2.3		TAKE FUEL ONBOARD AND MONITOR FUEL STATUS		
3.2.4		MONITOR SYSTEMS STATUS		
3.2.5		MONITOR COMM		
3.2.6		DISENGAGE REFUELING		
3.2.7		RECONFIGURE AIRCRAFT		
3.3		RENDEZVOUS		
3.3.1		INITIATE CLOSURE		
3.3.2	YES	DETERMINE / CONTROL CLOSURE	3	II
3.3.3	YES	DETERMINE / CONTROL BEARING	4	II
3.3.4	YES	DETERMINE / CONTROL ALTITUDE	4	II
3.3.5		EFFECT JOIN-UP		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
3.4		NAVIGATE		
3.4.1		MONITOR POSITION		
3.4.2		MONITOR COURSE		
3.4.3		MONITOR SPEED		
3.4.4		MONITOR ALTITUDE		
3.4.5		COMPUTE ETA		
3.4.6		COMPARE PRESENT STATUS AND ESTIMATES TO MISSION PLAN (TIME, FUEL, etc.)		
3.4.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	5	II
3.5		COMMUNICATE		
3.5.1		COMMUNICATE CLEAR VOICE (CV, FLIGHT MEMBER, TANKER ACCC, EW, etc.)		
3.5.2		COMMUNICATE SECURE VOICE		
3.5.3		PERFORM D/L COMM		
3.5.4		PERFORM SATCOM		
3.5.5	YES	SET EMCON	5	I
3.5.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
4.0		CRUISE OUT		
4.1		AVIATE		
4.1.1	YES	CRUISE/TRIM AIRCRAFT (FLY AT BEST CRUISE SPEED AND ALTITUDE)	1	II
4.1.2	YES	SELECT PILOT RELIEF MODE	4	I
4.1.3		MONITOR SYSTEMS STATUS		
4.1.4	YES	ANALYZE GO/NO-GO CRITERIA	4	I
4.1.5	YES	SET FORMATION	5	I
4.1.6		CONDUCT WEAPONS STATUS CHECK		
4.1.7	YES	INTERPRET WEAPONS STATUS REPORTS	4	I
4.1.8		PERFORM PENETRATION CHECKLIST		
4.2		NAVIGATE		
4.2.1		MONITOR POSITION		
4.2.2		MONITOR COURSE		
4.2.3		MONITOR SPEED		
4.2.4		MONITOR ALTITUDE		
4.2.5		COMPUTE ETA		
4.2.6		COMPARE PRESENT STATUS AND ESTIMATES TO MISSION PLAN (TIME PLAN AS REQUIRED)		
4.2.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	5	II
4.3		COMMUNICATE		
4.3.1		COMMUNICATE CLEAR VOICE		
4.3.2		COMMUNICATE SECURE VOICE		
4.3.3		PERFORM D/L COMM AMONG FRIENDLY UNITS		
4.3.4	YES	SET EMCON STATUS	5	I
4.3.5		PERFORM SATCOM		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
5.0		DESCENT		
5.1		AVIATE		
5.1.1	YES	SELECT PILOT RELIEF MODE	4	I
5.1.2		CONDUCT WEAPON STATUS TESTS		
5.1.3		ACTIVATE THREAT DETECTION SYSTEMS		
5.1.4	YES	ACQUIRE AND IDENTIFY MISSION CHECKPOINTS	2	I
5.1.5		ARM WEAPONS		
5.1.6		MONITOR THREAT DETECTION SYSTEMS		
5.1.7	YES	DETERMINE ALTERNATE TARGET DIVERT CRITERIA	5	II
5.1.8	YES	SELECT SENSOR MODES	4	I
5.1.9	YES	PERFORM AIRCRAFT DESCENT	1	II
5.1.10	YES	ACQUIRE AND IDENTIFY COAST IN POINT	2	I
5.1.11	YES	SET FORMATION	4	I
5.1.12		ACTIVATE MISSION RECORDER SYSTEM		
5.1.13	YES	INTERPRET MULTI-SENSOR CORRELATION DATA	3	II
5.1.14		MONITOR SYSTEM STATUS		
5.1.15	YES	ANALYZE GO/NO-GO CRITERIA	3	I
5.1.16		PERFORM COMBAT CHECKLIST		
5.2		NAVIGATE		
5.2.1		MONITOR POSITION		
5.2.2		MONITOR COURSE		
5.2.3		MONITOR SPEED		
5.2.4		MONITOR ALTITUDE		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
5.3	YES	COMMUNICATE	5	1
5.3.1		COMMUNICATE SECURE VOICE		
5.3.2		PERFORM D/L COMM AMONG FRIENDLIES		
5.3.3		SET EMCON		
5.3.4		PERFORM SATCOM		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
6.0		INGRESS		
6.1		AVIATE		
6.1.1	YES	SELECT PILOT RELIEF MODE	4	I
6.1.2		MONITOR WEAPONS STATUS		
6.1.3	YES	ACQUIRE & IDENTIFY MISSION CHECKPOINTS	2	I
6.1.4	YES	DETERMINE ALTERNATE TARGET DIVERT CRITERIA	4	II
6.1.5	YES	CONTROL AIRCRAFT (FLY AT BEST/PLANNED SPEED, ALTITUDE, etc.)	1	II
6.1.6		MAINTAIN FORMATION		
6.1.7		MONITOR SYSTEMS STATUS		
6.1.8	YES	ANALYZE TACTICAL SITUATION	2	I
6.1.8		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
6.2		RESPONSE TO THREAT		
6.2.1		MONITOR THREAT DETECTION SYSTEMS		
6.2.2	YES	DETERMINE THREAT DEGREE	1	I
6.2.3	YES	DETERMINE IMMINENCE OF THREAT	2	I
6.2.4	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
6.2.5		PERFORM THREAT AVOIDANCE/SUPPRESSION		
6.2.6	YES	DETERMINE OPTIMUM RE-ROUTING, AS REQUIRED	3	II
6.3		COORDINATED SENSOR ACTIVITIES		
6.3.1	YES	OPERATE SENSORS	3	I
6.3.2		CORRELATE ON-BOARD SENSOR DATA/ INFORMATION		
6.3.3		CORRELATE EXTERNAL DATA WITH ON-BOARD DATA/INFORMATION		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
6.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	3	II
6.4		PRELIMINARY TARGETING		
6.4.1		PERFORM PRELIMINARY TARGETING MANEUVER(S)		
6.4.2		PERFORM TARGET SEARCH/DETECTION		
6.4.3	YES	ACQUIRE AND IDENTIFY TARGET AREA	2	I
6.5		NAVIGATE		
6.5.1		MONITOR POSITION		
6.5.2		MONITOR COURSE		
6.5.3		MONITOR SPEED		
6.5.4		MONITOR ALTITUDE		
6.5.5		COMPUTE TOT		
6.5.6		COMPARE PRESENT STATUS & ESTIMATES TO MISSION PLAN		
6.5.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	3	II
6.5.8		PERFORM TERRAIN AVOIDANCE		
6.5.9	YES	PERFORM NAVIGATION SYSTEM UPDATE	3	I
6.6		COMMUNICATE		
6.6.1		COMMUNICATE SECURE VOICE		
6.6.2		PERFORM D/L COMM W/ FRIENDLIES		
6.6.3	YES	SET EMCON	3	I
6.6.4		PERFORM SATCOM		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.0		TARGET ATTACK		
7.1		AVIATE		
7.1.1	YES	SELECT PILOT RELIEF MODE	4	I
7.1.2		PERFORM WEAPON DELIVERY CHECKLIST		
7.1.3		MONITOR WEAPONS STATUS		
7.1.4	YES	CONTROL AIRCRAFT	1	II
7.1.5		MAINTAIN FORMATION		
7.1.6		MONITOR SYSTEMS STATUS		
7.1.7	YES	ANALYZE GO/NO-GO CRITERIA	4	I
7.1.8		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
7.2		RESPONSE TO THREAT		
7.2.1		MONITOR THREAT DETECTION SYSTEMS		
7.2.2	YES	DETERMINE THREAT DEGREE	2	I
7.2.3	YES	DETERMINE IMMINENCE OF THREAT	2	I
7.2.4	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
7.2.5		PERFORM THREAT AVOIDANCE/SUPPRESSION		
7.3		COORDINATED SENSOR ACTIVITIES		
7.3.1	YES	OPERATE SENSORS	3	I
7.3.2		CORRELATE ON-BOARD SENSOR DATA/ INFORMATION		
7.3.3		CORRELATE EXTERNAL DATA WITH ON-BOARD DATA/INFORMATION		
7.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	3	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.4		FINAL TARGETING		
7.4.1		PERFORM TARGETING MANEUVER, AS REQUIRED		
7.4.2	YES	PERFORM TARGET ACQUISITION	2	I
7.4.3	YES	PERFORM TARGET IDENTIFICATION/CLASSIFICATION	3	I
7.4.4	YES	PERFORM TARGET DESIGNATION	2	I
7.5		WEAPON DELIVERY		
7.5.1	YES	SELECT WEAPON	2	I
7.5.2	YES	SELECT WEAPON MODE	2	I
7.5.3	YES	EXECUTE COORDINATED WEAPON DELIVERY MANEUVER (AUTO OR MANUAL)	3	II
7.5.4	YES	COMMIT WEAPON	2	I
7.5.5		EXECUTE ORDINANCE DELIVERY ESCAPE MANEUVER		
7.6		WEAPON GUIDANCE		
7.6.1		PROVIDE STEERING DATA/ILLUMINATION		
7.7		DAMAGE ASSESSMENT		
7.7.1	YES	DETERMINE TARGET DAMAGE	4	II
7.7.2	YES	ASSESS RE-ATTACK OPTIONS	5	II
7.8		NAVIGATE		
7.8.1		MONITOR POSITION		
7.8.2		MONITOR COURSE		
7.8.3		MONITOR SPEED		
7.8.4		MONITOR ALTITUDE		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
7.8.5	YES	COMPUTE TOT	3	II
7.8.6		COMPARE PRESENT STATUS & ESTIMATES TO MISSION PLAN		
7.8.7		ADJUST FLIGHT PLAN, AS REQUIRED		
7.8.8		PERFORM TERRAIN AVOIDANCE		
7.8.9		COMPLY WITH CLEARANCE/INSTRUCTION		
7.9	YES	COMMUNICATE	5	I
7.9.1		COMMUNICATE SECURE VOICE		
7.9.2		PERFORM D/L COMM W/ FRIENDLIES		
7.9.3		SET EMCON		
7.9.4		PERFORM SATCOM		
7.9.5		COMMUNICATE CLEAR VOICE, AS REQUIRED		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
8.0		EGRESS		
8.1		AVIATE		
8.1.1	YES	SELECT PILOT RELIEF MODE	4	I
8.1.2		MONITOR SYSTEMS STATUS		
8.1.3	YES	ACQUIRE & IDENTIFY MISSION CHECKPOINTS	3	I
8.1.4	YES	CONTROL AIRCRAFT (FLY AT BEST/PLANNED SPEED, ALTITUDE, etc.)	1	II
8.1.5		MAINTAIN FORMATION		
8.1.6		MONITOR SYSTEMS STATUS		
8.1.7		EXECUTE EMERGENCY PROCEDURES, AS REQUIRED		
8.1.8		EXECUTE RETURN TO FORCE PROCEDURE(S)		
8.2		RESPONSE TO THREAT		
8.2.1		MONITOR THREAT DETECTION SYSTEMS		
8.2.2	YES	DETERMINE THREAT DEGREE	1	I
8.2.3	YES	DETERMINE IMMINENCE OF THREAT	1	I
8.2.4	YES	DETERMINE TO AVOID OR SUPPRESS	2	II
8.2.5		PERFORM THREAT AVOIDANCE/SUPPRESSION		
8.2.6	YES	DETERMINE OPTIMUM RE-ROUTING, AS REQUIRED	3	II
8.3		COORDINATED SENSOR ACTIVITIES		
8.3.1	YES	OPERATE SENSORS	3	I
8.3.2		CORRELATE ONBOARD SENSOR DATA/INFORMA- TION		
8.3.3		CORRELATE EXTERNAL DATA WITH ONBOARD DATA/INFORMATION		
8.3.4	YES	INTERPRET SENSOR DATA/INFORMATION	3	II

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
8.4		CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY		
8.4.1		PERFORM TARGETING MANEUVER		
8.4.2	YES	PERFORM TARGET ACQUISITION	4	I
8.4.3	YES	PERFORM TARGET IDENTIFICATION/CLASSIFICA- TION	3	I
8.4.4	YES	PERFORM TARGET DESIGNATION	3	I
8.4.5	YES	SELECT WEAPON	3	I
8.4.6	YES	SELECT WEAPON MODE	3	I
8.4.7	YES	EXECUTE WEAPON DELIVERY MANEUVER	3	II
8.4.8	YES	COMMIT WEAPON	3	I
8.4.9		EXECUTE FRAG AVOIDANCE MANEUVER		
8.4.10		PROVIDE STEERING DATA/ILLUMINATION		
8.4.11	YES	DETERMINE TARGET DAMAGE	5	II
8.5		NAVIGATE		
8.5.1		MONITOR POSITION		
8.5.2		MONITOR COURSE		
8.5.3		MONITOR SPEED		
8.5.4		MONITOR ALTITUDE		
8.5.5		COMPUTE FLOT PENETRATION TIME		
8.5.6		COMPARE PRESENT STATUS & ESTIMATES TO MISSION PLAN		
8.5.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	3	II
8.5.8		PERFORM TERRAIN AVOIDANCE		
8.5.9	YES	PERFORM NAVIGATION SYSTEM UPDATE	5	I

	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
8.6	YES	COMMUNICATE	5	I
8.6.1		COMMUNICATE SECURE VOICE		
8.6.2		COMMUNICATE CLEAR VOICE		
8.6.3		PERFORM D/L COMM AMONG FRIENDLIES		
8.6.4		PERFORM SATCOM		
8.6.5		SET EMCON		
8.6.6		SET CIT MODES AND CODES		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
9.0		CLIMB		
9.1		AVIATE		
9.1.1		ASSUME CLIMB ATTITUDE		
9.1.2	YES	CONTROL AIRCRAFT OPERATION AND FLIGHT	1	II
9.1.3		MONITOR SYSTEM STATUS		
9.1.4		MAINTAIN FORMATION		
9.2		AERIAL REFUELING		
9.2.1		CONFIGURE AIRCRAFT		
9.2.2		PERFORM PLUG-IN		
9.2.3		TAKE FUEL ON-BOARD AND MONITOR FUEL STATUS		
9.2.4		MONITOR SYSTEMS STATUS		
9.2.5		MONITOR COMM		
9.2.6		DISENGAGE REFUELING		
9.2.7		RECONFIGURE AIRCRAFT		
9.3		RENDEZVOUS		
9.3.1		INITIATE CLOSURE		
9.3.2	YES	DETERMINE/CONTROL CLOSURE	3	II
9.3.3	YES	DETERMINE/CONTROL BEARING	4	II
9.3.4	YES	DETERMINE/CONTROL ALTITUDE	4	II
9.3.5		EFFECT JOIN-UP		
9.4		NAVIGATE		
9.4.1		MONITOR POSITION		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
9.4.2		MONITOR COURSE		
9.4.3		MONITOR SPEED		
9.4.4		MONITOR ALTITUDE		
9.4.5		COMPUTE ETA		
9.4.6		COMPARE PRESENT STATUS AND ESTIMATES TO PLAN (TIME, FUEL, etc.)		
9.4.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	5	II
9.5		COMMUNICATE		
9.5.1		COMMUNICATE CLEAR VOICE (CV FLIGHT MEMBER, TANKER ACCC, EW, etc.)		
9.5.2		COMMUNICATE SECURE VOICE		
9.5.3		PERFORM D/L COMM		
9.5.4		PERFORM SATCOM		
9.5.5	YES	PERFORM EMCON	5	I

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
10.0		RETURN TO FORCE		
10.1		AVIATE		
10.1.1	YES	CRUISE/TRIM AIRCRAFT (FLY AT BEST CRUISE SPEED AND ALTITUDE)	1	II
10.1.2	YES	SELECT PILOT RELIEF MODE	4	I
10.1.3		MONITOR SYSTEMS STATUS		
10.1.4	YES	SET FORMATION	5	I
10.2		NAVIGATE		
10.2.1		MONITOR POSITION		
10.2.2		MONITOR COURSE		
10.2.3		MONITOR SPEED		
10.2.4		MONITOR ALTITUDE		
10.2.5		COMPUTE ETA		
10.2.6		COMPARE PRESENT STATUS AND ESTIMATES TO MISSION PLAN (TIME, FUEL, etc.)		
10.2.7	YES	ADJUST FLIGHT PLAN, AS REQUIRED	5	II
10.3		COMMUNICATE		
10.3.1		COMMUNICATE CLEAR VOICE		
10.3.2		COMMUNICATE SECURE VOICE		
10.3.3		PERFORM D/L COMM AMONG FRIENDLY UNITS		
10.3.4	YES	SET EMCON STATUS	5	I
10.3.5		PERFORM SATCOM		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
11.0		RECOVERY		
11.1		AVIATE		
11.1.1		PERFORM PENETRATION CHECKLIST		
11.1.2	YES	SELECT PILOT RELIEF MODE	3	I
11.1.3		SAFE WEAPONS		
11.1.4		MONITOR THREAT DETECTION SYSTEMS		
11.1.5	YES	PERFORM AIRCRAFT DESCENT	1	II
11.1.6	YES	SET RECOVERY FORMATION, AS REQUIRED	5	I
11.1.7	YES	INTERPRET MULTI-SENSOR CORRELATION DATA	3	II
11.1.8		MONITOR SYSTEM STATUS		
11.1.9		EXECUTE EMERGENCY PROCEDURE(S), AS REQUIRED		
11.1.10	YES	PERFORM FUEL DUMP, AS REQUIRED	4	II
11.1.11	YES	PERFORM APPROACH/PATTERN ENTRY	1	II
11.1.12		CONFIGURE AIRCRAFT FOR LANDING		
11.1.13		PERFORM LANDING CHECKLIST		
11.1.14	YES	PERFORM LANDING	1	II
11.1.15	YES	DETERMINE REQUIREMENT FOR MISSED APPROACH/WAVE-OFF	1	II
11.1.16		PERFORM BOLTER/MISSED APPROACH/WAVE- OFF (AS REQUIRED)		
11.2		NAVIGATE		
11.2.1		MONITOR POSITION		
11.2.2		MONITOR COURSE		
11.2.3		MONITOR SPEED		
11.2.4		MONITOR ALTITUDE		

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	DECISION REQ'TS	PHASE, SEGMENT, TASKS	CRITICALITY	DECISION TYPE
11.2.5	YES	COMPLY WITH CLEARANCE/INSTRUCTIONS	3	I
11.3		COMMUNICATE		
11.3.1		COMMUNICATE SECURE VOICE		
11.3.2		COMMUNICATE CLEAR VOICE		
11.3.3		PERFORM D/L COMM AMONG FRIENDLIES		
11.3.4	YES	SET EMCON	5	I
11.3.5		SET CIT MODES AND CODES		
11.4		ON DECK		
11.4.1		TAXI CLEAR		
11.4.2		PARK AIRCRAFT		
11.4.3		PERFORM SHUT DOWN CHECKLIST		
11.4.4		RECORD APPLICABLE DATA		
11.4.5		SECURE AIRCRAFT		

PHASE: PRE-FLIGHT (1.0)
SEGMENT: TAXI (1.3)
DECISION: Set EMCON (1.3.6)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

PHASE: TAKE-OFF (2.0)
SEGMENT: ON DECK (2.1)
DECISION: Determine preparedness for flight (2.1.4)
DECISION TYPE: I
CRITICALITY: 1
ALTERNATIVES:
1. Go
2. Abort
3. Alter standards
3. Delay decision

INFORMATION REQUIREMENTS:

1. ATC clearance/instruction
2. Checklist results
3. Meteorological conditions – present position
4. Meteorological conditions – enroute
5. Meteorological conditions – target
6. System status
7. Flight warnings/cautions/advisories
8. Criticality of flight/mission
9. Flight member status
10. Tanker/support aircraft status
11. Threat condition
12. Launch window (time remaining)
13. Flight member visual check
14. Final checker results
15. Fuel weight board accuracy
16. Catapult officer's readiness/assurance
17. Type catapult shot (i.e., mil/max)
18. End speed

PHASE: TAKE-OFF(2.0)
SEGMENT: AVIATE (2.2)
DECISION: Establish Aircraft Flight Attitude/Power (2.2.3)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. End speed
2. Rotation attitude
3. Landing gear position/transition
4. Flap position/transition
5. Fuel transfer initiated/transferring
6. Vertical velocity
7. Altitude (AGL/MSL)
8. Airspeed
9. Heading
10. Standard/non-standard departure (visual)
11. Standard instrument departure
12. Engine performance
13. Hydraulic status
14. Pneumatic status
15. Flight warnings/cautions/advisories
16. Ejection system status
17. External stores integrity
18. Flight control system operability
19. Angle of attack
20. Local barometric pressure
21. Altimeter barometric pressure setting

PHASE: TAKE-OFF (2.0)
SEGMENT: AVIATE (2.2)
DECISION: Analyze GO/NO-GO criteria (2.2.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:
1. Engine performance
2. Flight control system operability
3. System performance
4. External stores integrity
5. Directive instructions
6. Flight warnings/cautions/advisories

PHASE: TAKE OFF (2.0)
SEGMENT: COMMUNICATE (2.4)
DECISION: Set EMCON (2.4.3)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - Emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

PHASE: CLIMB (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Control aircraft operation and flight (3.1.2)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Standard/non-standard departure (visual)
12. Standard instrument departure
13. Flight warnings/cautions/advisories
14. Navigation compliance cues
15. Sideslip
16. Optimum airspeed
17. Optimum vertical velocity
18. Optimum heading
19. Local barometric pressure
20. Altimeter barometric pressure setting

PHASE: CLIMB (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Analyze Go/No-go Criteria (3.1.4)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:
1. Engine performance
2. Flight control system operability
3. System performance
4. External stores integrity
5. Directive instructions
6. Flight warnings/cautions/advisories

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PHASE: CLIMB (3.0)
SEGMENT: AVIATE (3.1)
DECISION: Set formation (3.1.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. As directed

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

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PHASE: CLIMB (3.0)
SEGMENT: RENDEZVOUS (3.3)
DECISION: Determine/control closure (3.3.2)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Desired rate of closure
2. Rate of closure
3. Distance between flight members
4. Disengagement opportunities/options
5. Joiner's indicated airspeed
6. Leader's indicated airspeed
7. Sideslip
8. Speedbrake/lift degradation device position
9. Power setting
10. Flight member position

PHASE: CLIMB (3.0)
SEGMENT: RENDEZVOUS (3.3)
DECISION: Determine/control bearing (3.3.3)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Desired bearing line – constant
2. Desired bearing line – curvilinear
3. Actual bearing from leader
4. Leader's rate of turn

PHASE: CLIMB (3.0)
SEGMENT: RENDEZVOUS (3.3)
DECISION: Determine/control altitude (3.3.4)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Leader's altitude
2. Desired ownship altitude
3. Altitude (AGL/MSL)
4. Vertical velocity change(s)
5. Position of horizon
6. Engine thrust available

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PHASE: CLIMB (3.0)
SEGMENT: NAVIGATE (3.4)
DECISION: Adjust flight plan, as required (3.4.7)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_S
7. Optimum indicated Mach - P_S
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to target
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: CLIMB (3.0)
SEGMENT: COMMUNICATE (3.5)
DECISION: Set EMCON (3.5.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

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PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Cruise/Trim aircraft (4.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum altitude
15. Optimum fuel flow
16. Ground speed
17. Optimum heading
18. Altimeter barometric pressure setting

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Select pilot relief mode (4.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Attitude hold-barometric
3. Attitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple - External
8. Couple - auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

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PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Analyze GO/NO-GO Criteria (4.1.4)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:

1. Engine performance
2. Flight control system operability
3. System performance
4. Directive instructions
5. Flight warnings/cautions/advisories
6. Meteorological conditions (present)
7. Fuel flow
8. Threat condition

PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Set formation (4.1.5)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. Same way, same day
9. As directed

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

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PHASE: CRUISE OUT (4.0)
SEGMENT: AVIATE (4.1)
DECISION: Interpret Weapons Status Reports (4.1.7)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Weapon armed and ready
2. Weapon armed but not ready
3. Weapon safe
4. Weapon hung
5. Weapon failed
6. Weapon locked/unlocked
7. Weapon degraded
8. Weapon not communicating with mission computer

INFORMATION REQUIREMENTS:

1. Weapons onboard - type/model
2. Weapons onboard - location
3. Weapons onboard - quantity each location
4. Weapons launch modes available
5. Weapon mode selected
6. Master mode selected
7. Weapon selected
8. Weapon initialization data preplanned
9. Weapon initialization data received by weapon
10. Weapon prep data availability
11. Weapon prep data receipt by weapon
12. Interval selected (for multiple releases)
13. Minimum interval allowable
14. Arming options available
15. Arming option selected
16. Fuzing options available
17. Fuzing option selected
18. Quantity selected per interval (for multiple release)
19. Weapon auto gain control status (if applicable)
20. Weapon threat library selected (if applicable)
21. Weapon target type priority selected (if applicable)
22. Terminal guidance option selected

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PHASE: CRUISE OUT (4.0)
SEGMENT: NAVIGATE (4.2)
DECISION: Adjust flight plan, as required (4.2.7)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to target
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: CRUISE OUT (4.0)
SEGMENT: COMMUNICATE (4.3)
DECISION: Set EMCON (4.3.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Select pilot relief mode (5.1.1)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple - External
8. Couple - auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

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PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Acquire & identify mission checkpoints (5.1.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Yes – that is my checkpoint
2. No – that is not my checkpoint
3. Delay decision

INFORMATION REQUIREMENTS:

1. Sensor image prediction
2. Sensor image signature (actual)
3. x,y,z geographical position of point (lat/long or UTM, etc.)
4. Perspective view (anticipated)
5. Perspective view (actual)
6. Elapsed time/time to go
7. Distance to point
8. Distance from last checkpoint
9. Ownship position
10. Geographical relationship (i.e., landmarks)
11. Moving map/navigation system correlation
12. Anticipated albedo of check point
13. Position of point relative to ownship

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PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Determine alternate target divert criteria (5.1.7)
DECISION TYPE: II
CRITICALITY: 5
ALTERNATIVES:

INFORMATION REQUIREMENTS:

1. Target location
2. Alternate target location
3. Ownship position
4. Go/no-go decision point/time
5. Meteorological conditions - target
6. Alternate target present meteorological conditions
7. Target forecast meteorological conditions
8. Alternate target forecast meteorological conditions
9. Directive instructions
10. Threat intensity level
11. Threat lethality level
12. System performance
13. Capability of flight member (flight member/leader)

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PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Select sensor modes (5.1.8)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. On-all passive
2. On-all active
3. On-all LPI
4. On-auto mode optimization
5. On-preplanned initialization
6. Off
7. Standby

INFORMATION REQUIREMENTS:

1. Sensor modes/submodes available
2. Sensor modes/submodes selected
3. Sensor modes most suitable
4. Bistatic radar file track potential (as receiver)
5. Bistatic NCTR potential (as received)
6. Bistatic radar potential (as emitter)
7. Equivalent illumination/luminance levels
8. Individual sensor status
9. Auto mode optimization engaged/rejected
10. Preplanned initialization selected
11. Sensor boresight status
12. Individual sensor FOV/FOR available/selected
13. Individual sensor magnification available/selected
14. Individual sensor track mode available/selected
15. Individual sensor auto target acquisition available/selected
16. Target type anticipated
17. Target location anticipated
18. TKBS status
19. Threat imminence
20. Sensor threat library selected
21. Sensor correlation for display selected/available
22. Display information reject level(s) available/selected
23. Sensor footprint (individual)
24. Sensor footprint (suite)
25. Data link status
26. System status
27. Auto hand-off to weapon(s) available/selected
28. Sensor to sensor cueing available/selected
29. Sensor self-protect mode(s) available/selected
30. Directive instructions
31. Threat knowledge of ownship presence

PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Perform aircraft descent (5.1.9)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum vertical velocity
15. Optimum heading
16. Local barometric pressure
17. Altimeter barometric pressure setting

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PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Acquire & identify coast-in point (5.1.10)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Yes – that is my coast-in point
2. No – that is not my coast-in point
3. Delay decision

INFORMATION REQUIREMENTS:

1. Sensor image prediction
2. Sensor image signature (actual)
3. x,y,z geographical position of point (lat/long or UTM, etc.)
4. Perspective view (anticipated)
5. Perspective view (actual)
6. Elapsed time/time to go
7. Distance to point
8. Distance from last checkpoint
9. Ownship position
10. Geographical relationship (i.e., landmarks)
11. Moving map/navigation system correlation
12. Anticipated albedo of check point
13. Position of point relative to ownship

PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Set formation (5.1.11)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Box
6. Timed sequence
7. As directed

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

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PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Interpret multi-sensor correlation data (5.1.13)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Surface proximity
2. Planned route of flight
3. Present routing
4. Optimum routing
5. Significant topographical features
6. Spatial orientation imagery
7. Spatial orientation graphics
8. Target(s) cueing
9. Target location
10. Display format availability
11. Attitude
12. Flight member position
13. Target track
14. Target(s) ID/classification
15. Highest threat target(s) – priority
16. Preplanned target data
17. Target of opportunity data
18. Coincidence of multiple sensor target designation
19. Bearing/distance/rate of multi-sensor designation error
20. Ownship position
21. Externally obtained ownship positional information
22. Individual sensor status
23. Externally provided targeting information
24. Directive instructions
25. On-call uncorrelated processed individual sensor data/information
26. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
27. Threat imminence
28. Threat degree
29. Recommended action(s)
30. Imminent catastrophic event warning (ie., ground warning, missile/bullet impact, etc.)
31. Battle damage assessment
32. Flight plan compliance (early, late, etc.)
33. Inflight mission planning information
34. Flight member status
35. Externally provided intelligence information
36. Significant meteorological conditions

PHASE: DESCENT (5.0)
SEGMENT: AVIATE (5.1)
DECISION: Analyze GO/NO-GO Criteria (5.1.15)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:

1. Engine performance
2. Flight control system operability
3. System performance
4. Directive instructions
5. Flight warnings/cautions/advisories
6. Flight member status
7. Fuel flow
8. Threat condition
9. Meteorological conditions - enroute
10. Meteorological conditions - target

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PHASE: DESCENT (5.0)
SEGMENT: COMMUNICATE (5.3)
DECISION: Set EMCON (5.3.3)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

PHASE: INGRESS (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Select pilot relief mode (6.1.1)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple - External
8. Couple - auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

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PHASE: INGRESS (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Acquire & identify mission checkpoints (6.1.3)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Yes – that is my checkpoint
2. No – that is not my checkpoint
3. Delay decision

INFORMATION REQUIREMENTS:

1. Sensor image prediction
2. Sensor image signature (actual)
3. x,y,z geographical position of point (lat/long or UTM, etc.)
4. Perspective view (anticipated)
5. Perspective view (actual)
6. Elapsed time/time to go
7. Distance to point
8. Distance from last checkpoint
9. Ownship position
10. Geographical relationship (i.e., landmarks)
11. Moving map/navigation system correlation
12. Anticipated albedo of check point
13. Position of point relative to ownship

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PHASE: INGRESS (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Determine alternate target divert criteria (6.1.4)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Target location
2. Alternate target location
3. Ownship position
4. Go/no-go decision point/time
5. Meteorological conditions - target
6. Alternate target present meteorological conditions
7. Target forecast meteorological conditions
8. Alternate target forecast meteorological conditions
9. Directive instructions
10. Threat intensity level
11. Threat lethality level
12. System performance
13. Capability of flight member (flight member/leader)

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PHASE: INGRESS (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Control aircraft (6.1.5)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Terrain altitude (MSL)
7. Terrain topography
8. Clear of traffic/obstacles
9. System status
10. Flight warnings/cautions/advisories
11. Navigation compliance cues
12. Optimum airspeed
13. Optimum heading
14. Threat condition
15. Local barometric pressure
16. Altimeter barometric pressure setting
17. Low altitude cue
18. Low airspeed cue
19. High angle of attack cue
20. High yaw rate cue
21. Spin recovery response required
22. Present G
23. Max G

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PHASE: INGRESS (6.0)
SEGMENT: AVIATE (6.1)
DECISION: Analyze GO/NO-GO Criteria (6.1.8)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Go
2. Abort
3. Delay decision

INFORMATION REQUIREMENTS:

1. Engine performance
2. Flight control system operability
3. System performance
4. Directive instructions
5. Flight warnings/cautions/advisories
6. Flight member status
7. Fuel flow
8. Threat condition
9. Meteorological conditions - enroute
10. Meteorological conditions - target

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PHASE: INGRESS (6.0)
SEGMENT: RESPONSE TO THREAT (6.2)
DECISION: Determine threat degree (6.2.2)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Threat position
3. Number of threat platforms/weapons per platform (surface/airborne)
4. Ownship position
5. Threat state of readiness
6. Susceptibility of threat to countermeasures/expendables
7. Availability of countermeasures (type and no.)
8. SEAD plan applicability
9. Meteorological conditions (present)
10. Availability of stand off jamming
11. Effectiveness of standoff jamming against threat
12. Availability of self protection jamming
13. Effectiveness of onboard jamming against threat
14. Terrain topography
15. Topography along route of flight
16. Ordnance currently enroute to threat
17. Threat detection systems status
18. Ownship signatures which may be reduced (ie., out of burner)
19. Threat knowledge of ownship presence

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PHASE: INGRESS (6.0)
SEGMENT: RESPONSE TO THREAT (6.2)
DECISION: Determine imminence of threat (6.2.3)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Terrain topography
8. Topography along route of flight
9. Presence of RF energy radiating along route of flight
10. Presence of laser energy along route of flight
11. Automatic threat avoidance system status
12. Auto threat avoidance system selection/disable
13. Threat guidance phase (i.e., terminal, mid-course etc.)
14. Threat knowledge of ownship presence

PHASE: INGRESS (6.0)
SEGMENT: RESPONSE TO THREAT (6.2)
DECISION: Determine to avoid or suppress (6.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Topography along route of flight
3. Weapons inventory
4. Optimum routing
5. P_k of threat envelope of threat
6. Percentage chance of successful avoidance (P_s)
7. System performance
8. Feasibility of avoidance (ie., impact on TOT)
9. Suppressive weapon(s) footprint(s)
10. Optimum routing
11. Optimum attack profile – suppression
12. Optimum weapons release point
13. Detection of ownship by threat RF/laser system
14. Targeting of ownship by threat RF/laser system
15. Threat position
16. Ownship position
17. Suppression weapon hand-off status (complete, in work, available)
18. Ordnance currently enroute to threat
19. SEAD plan applicability
20. Suppressive weapon selection
21. Munition time of flight
22. Threat knowledge of ownship presence

PHASE: INGRESS (6.0)
SEGMENT: RESPONSE TO THREAT (6.2)
DECISION: Determine optimum re-routing, as required (6.2.6)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Threat condition
2. Threat type/capabilities
3. Threat zones
4. Clear zones
5. Heading direct to next waypoint
6. Heading direct to target
7. Route w/highest P_S to next waypoint
8. Route w/highest P_S to target
9. Optimum altitude - P_S
10. True airspeed
11. Ground speed
12. Time on target
13. Time to go
14. Elapsed time/time to go
15. Threat knowledge of ownship presence
16. Areas likely to be defended
17. Directive instructions

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PHASE: INGRESS (6.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (6.3)
DECISION: Operate sensors (6.3.1)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

PHASE: INGRESS (6.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (6.3)
DECISION: Interpret sensor data/information (6.3.4)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Surface proximity
2. Planned route of flight
3. Present routing
4. Optimum routing
5. Significant topographical features
6. Spatial orientation imagery
7. Spatial orientation graphics
8. Target(s) cueing
9. Target location
10. Display format availability
11. Attitude
12. Flight member position
13. Target track
14. Target(s) ID/classification
15. Highest threat target(s) – priority
16. Preplanned target data
17. Target of opportunity data
18. Coincidence of multiple sensor target designation
19. Bearing/distance/rate of multi-sensor designation error
20. Ownship position
21. Externally obtained ownship positional information
22. Individual sensor status
23. Externally provided targeting information
24. Directive instructions
25. On-call uncorrelated processed individual sensor data/information
26. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
27. Threat imminence
28. Threat degree
29. Recommended action(s)
30. Imminent catastrophic event warning (ie., ground warning, missile/bullet impact, etc.)
31. Battle damage assessment
32. Flight plan compliance (early, late, etc.)
33. Inflight mission planning information
34. Flight member status
35. Externally provided intelligence information
36. Significant meteorological conditions

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PHASE: INGRESS (6.0)
SEGMENT: PRELIMINARY TARGETING (6.4)
DECISION: Acquire & identify target area (6.4.3)
DECISION TYPE: I
CRITICALITY: 2
ALTERNATIVES:

1. Yes – that is the target area
2. No – that is not the target area
3. Delay decision

INFORMATION REQUIREMENTS:

1. Sensor image prediction
2. Sensor image signature (actual)
3. x,y,z geographical position of point (lat/long or UTM, etc.)
4. Perspective view (anticipated)
5. Perspective view (actual)
6. Elapsed time/time to go
7. Distance to point
8. Distance from last checkpoint
9. Ownship position
10. Geographical relationship (i.e., landmarks)
11. Moving map/navigation system correlation
12. Anticipated albedo of check point
13. Position of point relative to ownship

PHASE: INGRESS (6.0)
SEGMENT: NAVIGATE (6.5)
DECISION: Adjust flight plan, as required (6.5.7)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to target
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

PHASE: INGRESS (6.0)
SEGMENT: NAVIGATE (6.5)
DECISION: Perform navigation system update (6.5.9)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:
1. Visual check acceptable (within tolerance)
2. System check – accept
3. System check – reject

INFORMATION REQUIREMENTS:

1. Visual position
2. INS position
3. GPS position
4. TRN position
5. X/Y position of given (selected) points
6. Computed distance error
7. Computed direction of error
8. Drift rate (distance/unit of time)
9. Sensor selected for update (radar, fly over (human eye), HUD, TACAN, etc.)
10. System acceptance of accept/reject decision
11. Auto advisory that navigation system is in need of update [i.e., drift rate interlock – or – auto multi-sensor correlation] or is being updated
12. Assurance that designated position is same as x,y position (i.e., navigation and sensor both referencing same point)

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PHASE: INGRESS (6.0)
SEGMENT: COMMUNICATE (6.6)
DECISION: Set EMCON (6.6.3)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

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PHASE: TARGET ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Select pilot relief mode (7.1.1)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto trim
6. Manual trim
7. Auto throttles
8. Manual throttles
9. None
10. Couple – External
11. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

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PHASE: TARGET ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Control aircraft (7.1.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Terrain altitude (MSL)
7. Terrain topography
8. Clear of traffic/obstacles
9. System status
10. Flight warnings/cautions/advisories
11. Navigation compliance cues
12. Optimum airspeed
13. Optimum heading
14. Threat condition
15. Local barometric pressure
16. Altimeter barometric pressure setting
17. Low altitude cue
18. Low airspeed cue
19. High angle of attack cue
20. High yaw rate cue
21. Spin recovery response required
22. Present G
23. Max G

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PHASE: TARGET ATTACK (7.0)
SEGMENT: AVIATE (7.1)
DECISION: Analyze GO/NO-GO criteria (7.1.7)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Go – attack assigned target
2. Go – attack alternate target
3. Go – attempt attack on target of opportunity
4. Do not go – abort
5. Delay decision

INFORMATION REQUIREMENTS:

1. Aircraft performance – ownship
2. Aircraft performance – flight members
3. System performance
4. Directive instructions
5. Flight warnings/cautions/advisories
6. Meteorological conditions - target
7. Battlefield visibility (target area)
8. Threat condition
9. Reasonable assurance of proper target (intended)
10. Mutual consent achievement
11. Existence of targets of opportunity

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PHASE: TARGET ATTACK (7.0)
SEGMENT: RESPONSE TO THREAT (7.2)
DECISION: Determine threat degree (7.2.2)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Threat position
3. Number of threat platforms/weapons per platform (surface/airborne)
4. Ownship position
5. Threat state of readiness
6. Susceptibility of threat to countermeasures/expendables
7. Availability of countermeasures (type and no.)
8. SEAD plan applicability
9. Meteorological conditions (present)
10. Availability of stand off jamming
11. Effectiveness of standoff jamming against threat
12. Availability of self protection jamming
13. Effectiveness of onboard jamming against threat
14. Topography in immediate vicinity
15. Topography along route of flight
16. Ordnance currently enroute to threat
17. Threat detection systems status
18. Ownship signatures which may be reduced (ie., out of burner)
19. Threat knowledge of ownship presence

NADC-90096-60

PHASE: TARGET ATTACK (7.0)
SEGMENT: RESPONSE TO THREAT (7.2)
DECISION: Determine imminence of threat (7.2.3)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Topography in immediate vicinity
8. Topography along route of flight
9. Presence of RF energy radiating along route of flight
10. Presence of laser energy along route of flight
11. Automatic threat avoidance system status
12. Auto threat avoidance system selection/disable
13. Threat guidance phase (i.e., terminal, mid-course etc.)
14. Threat knowledge of ownship presence

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PHASE: TARGET ATTACK (7.0)
SEGMENT: RESPONSE TO THREAT (7.2)
DECISION: Determine to avoid or suppress (7.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Topography along route of flight
3. Weapons inventory
4. Optimum routing
5. P_k of threat envelope of threat
6. Percentage chance of successful avoidance (P_s)
7. System performance
8. Feasibility of avoidance (ie., impact on TOT)
9. Suppressive weapon(s) footprint(s)
10. Optimum routing
11. Optimum attack profile – suppression
12. Optimum weapons release point
13. Detection of ownship by threat RF/laser system
14. Targeting of ownship by threat RF/laser system
15. Threat position
16. Ownship position
17. Suppression weapon hand-off status (complete, in work, available)
18. Ordnance currently enroute to threat
19. SEAD plan applicability
20. Suppressive weapon selection
21. Munition time of flight
22. Threat knowledge of ownship presence

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PHASE: TARGET ATTACK (7.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (7.3)
DECISION: Operate sensors (7.3.1)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

NADC-90096-60

PHASE: TARGET ATTACK (7.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (7.3)
DECISION: Interpret sensor data/information (7.3.4)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Surface proximity
2. Planned route of flight
3. Present routing
4. Optimum routing
5. Significant topographical features
6. Spatial orientation imagery
7. Spatial orientation graphics
8. Target(s) cueing
9. Target location
10. Display format availability
11. Attitude
12. Flight member position
13. Target track
14. Target(s) ID/classification
15. Highest threat target(s) – priority
16. Preplanned target data
17. Target of opportunity data
18. Coincidence of multiple sensor target designation
19. Bearing/distance/rate of multi-sensor designation error
20. Ownship position
21. Externally obtained ownship positional information
22. Individual sensor status
23. Externally provided targeting information
24. Directive instructions
25. On-call uncorrelated processed individual sensor data/information
26. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
27. Threat imminence
28. Threat degree
29. Recommended action(s)
30. Imminent catastrophic event warning (ie., ground warning, missile/bullet impact, etc.)
31. Battle damage assessment
32. Flight plan compliance (early, late, etc.)
33. Inflight mission planning information
34. Flight member status
35. Externally provided intelligence information
36. Significant meteorological conditions

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PHASE: TARGET ATTACK (7.0)
SEGMENT: FINAL TARGETING (7.4)
DECISION: Perform target acquisition (7.4.2)
DECISION TYPE: I
CRITICALITY: 2
ALTERNATIVES:

1. Utilize active sensor(s) only
2. Utilize passive sensor(s) only
3. Utilize onboard smart weapons
4. Utilize combination of active and passive sensors
5. Utilize external source targeting information
6. Utilize navigation system
7. Utilize visual scan
8. Utilize automatic acquisition system

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Sensor image prediction
3. Actual sensor image
4. Perspective view (anticipated)
5. Actual perspective view
6. Elapsed time/time to go
7. Distance to target
8. Ownship position
9. Target location
10. Target cueing (sensor to sensor)
11. Sensor footprint (individual)
12. Achievement of ownship to target line of sight
13. Distance from initial point to target
14. Ownship distance from initial point to target
15. Individual sensor status
16. Weapon status
17. Weapons delivery system status
18. Geographical relationship (i.e., landmarks)
19. Target cueing (sensor/navigation system to eyeball)
20. Anticipated target signature
21. Source of externally provided targeting information
22. Accuracy of externally provided targeting information
23. Significant topographical features
24. Coincidence of multiple sensor target area localization
25. Bearing/distance/rate of multi-sensor localization error
26. Weapon selected
27. Weapon mode selected
28. Meteorological conditions (present)
29. Threat knowledge of ownship presence
30. Equivalent illumination/luminance levels
31. Individual sensor FOV/FOR available/selected
32. Individual sensor magnification available/selected

(continued on next page)

INFORMATION REQUIREMENTS (continued):

- 33. Individual sensor auto target acquisition available/selected
- 34. Data link status
- 35. System status
- 36. Weapons system master mode
- 37. Navigation system/sensor correlation/error
- 38. Indication of automatic acquisition requirement
- 39. Specific targets acquired by other flight members
- 40. Specific targets assigned to/by other flight members
- 41. Specific targets assigned to/by ground/control elements

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PHASE: TARGET ATTACK (7.0)
SEGMENT: FINAL TARGETING (7.4)
DECISION: Perform target identification/classification (7.4.3)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Yes – that is my target
2. No – that is not my target
3. Delay decision

INFORMATION REQUIREMENTS:

1. Automatic target recognition system decision/confidence level
2. NCTR/PNCTR decision
3. External source verification of initial identification
4. PELTS decision/confidence level
5. Sensor image prediction
6. Actual sensor image
7. Target location
8. Weapons delivery system status
9. Target shape, signature, albedo
10. Expected target shape, signature, albedo for comparison
11. Indication of auto target acquisition and NATO identification

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PHASE: TARGET ATTACK (7.0)
SEGMENT: FINAL TARGETING (7.4)
DECISION: Perform target designation (7.4.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. Fixed position track – navigation system
2. Mobile track – weapons system
3. Multi-sensor track
4. Visual track

INFORMATION REQUIREMENTS:

1. Target designator control assignment position
2. Coincidence of multiple sensor target designation
3. Bearing/distance/rate of multi-sensor designation error
4. On-call uncorrelated processed individual sensor data/information
5. Indication (ie., symbology) of weapons system receipt of designation command
6. Overlay of designation spot in relation to target
7. Mobile track command accomplishment
8. Position of target designator control (cross hairs) in relation to intended target
9. Location of highest sensor track potential on target
10. Azimuth/elevation of sensor centroid when slewed by target designator control
11. Forced/auto correlation active
12. Sensor footprint (suite)
13. Achievement of ownship to target line of sight
14. Conformation of visual track with navigation/sensor track
15. Automatic acquisition, ID and designation cycle accomplishment indication
16. Indication of auto acquisition, ID, and hand-off to designation cycle difficulty
17. Specific targets designated by other flight members
18. Specific targets assigned to/by other flight members
19. Specific targets assigned to/by ground/control elements

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PHASE: TARGET ATTACK (7.0)
SEGMENT: WEAPON DELIVERY (7.5)
DECISION: Select weapon (7.5.1)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Weapon 1
2. Weapon 2
3. Weapon n
4. Automatic selection allowed

INFORMATION REQUIREMENTS:

1. Weapons onboard - type/model
2. Weapons onboard - quantity each location
3. Weapon status
4. Release program selected (singles, pairs, ripple, interval, sequence, etc.)
5. Delivery mode selected
6. Attack plan
7. Weapon delivery envelope
8. Armed/safe status
9. System status

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PHASE: TARGET ATTACK (7.0)
SEGMENT: WEAPON DELIVERY (7.5)
DECISION: Select weapon mode (7.5.2)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. Weapon mode – automatic
2. Weapon mode – 1
3. Weapon mode – 2
4. Weapon mode – n

INFORMATION REQUIREMENTS:

1. Modes available
2. Mode applicability to assigned/selected target
3. Mode operability
4. Weapon mode delivery envelope
5. Release program selected (singles, pairs, ripple, interval, sequence, etc.)
6. Delivery mode selected
7. Weapon mode selected
8. Armed/safe status
9. Weapon rate of fire
10. Manual mil setting(s) selected/available

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PHASE: TARGET ATTACK (7.0)
SEGMENT: WEAPON DELIVERY (7.5)
DECISION: Execute coordinated weapon delivery maneuver (7.5.3)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Delivery mode selected
2. Delivery modes available
3. Range to target (horizontal)
4. Time to target
5. Time on target (assigned)
6. Sensor footprint (individual)
7. Armed/safe status
8. Min/max delivery altitude
9. Min/max delivery airspeed
10. Min/max delivery range
11. Min/max delivery G-loading
12. Optimum delivery altitude
13. Optimum delivery airspeed
14. Optimum delivery range
15. Optimum delivery G-loading
16. Target location
17. Flight member position
18. Angle of attack
19. Airspeed
20. Altitude (AGL/MSL)
21. Heading
22. Attitude
23. Ownship slant range to target
24. Ownship position
25. Significant topographical features
26. Threat imminence
27. Threat degree
28. Weapon mode delivery envelope
29. Ownship performance degradations (ie., battle damage)
30. Ownship to target line of sight requirement(s)
31. Munition time of flight
32. Directive instructions
33. Threat knowledge of ownship presence
34. Standby (to maneuver) cue
35. Pull up cue
36. Automatic target attack system engagement indication
37. Wind-corrected steering to target
38. High angle of attack cue
39. High yaw rate cue
40. Present G
41. Max G

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PHASE: TARGET ATTACK (7.0)
SEGMENT: WEAPON DELIVERY (7.5)
DECISION: Commit weapon (7.5.4)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. Automatic execution
2. Manual execution at maximum range – computer solution
3. Manual execution at minimum range – computer solution
4. Manual execution at heart of envelope – computer solution
5. Manual execution at preplanned point – manual solution

INFORMATION REQUIREMENTS:

1. Delivery mode selected
2. Wind-corrected steering to target
3. Flight path to release point
4. Precise instant for manual release (shoot cue)
5. Execution accomplishment indication
6. Munition time of flight
7. Automatic mode weapons delivery solution indication (cueing)
8. CCIP/CCRP mode weapons delivery solution indication (cueing)
9. Slant range
10. Target attitude
11. Winds at target
12. Horizontal range
13. Altitude (AGL/MSL)
14. True airspeed
15. Attitude
16. Flight path
17. Standby (to release) cue
18. Pull up cue
19. Dud cue
20. G-loading
21. Angle of attack
22. Threat imminence
23. Threat degree
24. Directive instructions
25. Threat knowledge of ownship presence
26. Automatic target attack system engagement indication

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PHASE: TARGET ATTACK (7.0)
SEGMENT: DAMAGE ASSESSMENT (7.7)
DECISION: Determine target damage (7.7.1)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Visual observation – self
2. Onboard sensor observation
3. External sensor observation
4. Airborne visual observation – other
5. Ground visual observation – other
6. Munition impact point
7. Munition activation, high order
8. Cessation of emission from target (ELINT/SIGINT)

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PHASE: TARGET ATTACK (7.0)
SEGMENT: DAMAGE ASSESSMENT (7.7)
DECISION: Assess reattack options (7.7.2)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Battle damage assessment
2. Threat imminence
3. Threat degree
4. Importance of target destruction
5. Directive instructions
6. Flight attrition
7. Aircraft performance – ownship
8. Aircraft performance – flight members
9. System performance
10. Flight warnings/cautions/advisories
11. Target area visibility
12. Mutual consent achievement

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PHASE: TARGET ATTACK (7.0)
SEGMENT: NAVIGATE (7.8)
DECISION: Adjust flight plan, as required (7.8.7)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Time – seconds/minutes early or late
2. Ground speed
3. True airspeed
4. Indicated airspeed
5. Optimum altitude
6. Run-in heading
7. Release point (preplanned)
8. Course to alignment turn point (offset point)
9. Munition time of flight
10. Time on target
11. Distance to target
12. Directive instructions
13. System performance
14. Threat alert condition
15. Threat knowledge of ownship presence
16. Known defended areas

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PHASE: TARGET ATTACK (7.0)
SEGMENT: COMMUNICATE (7.9)
DECISION: Set EMCON (7.9.3)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

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PHASE: EGRESS (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Select pilot relief mode (8.1.1)
DECISION TYPE: 1
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Attitude hold-barometric
3. Attitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

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PHASE: EGRESS (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Acquire & identify mission checkpoints (8.1.3)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Yes – that is my checkpoint
2. No – that is not my checkpoint
3. Delay decision

INFORMATION REQUIREMENTS:

1. Sensor image prediction
2. Sensor image signature (actual)
3. x,y,z geographical position of point (lat/long or UTM, etc.)
4. Perspective view (anticipated)
5. Perspective view (actual)
6. Elapsed time/time to go
7. Distance to point
8. Distance from last checkpoint
9. Ownship position
10. Geographical relationship (i.e., landmarks)
11. Moving map/navigation system correlation
12. Anticipated albedo of check point
13. Position of point relative to ownship

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PHASE: EGRESS (8.0)
SEGMENT: AVIATE (8.1)
DECISION: Control aircraft (8.1.4)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Terrain altitude (MSL)
7. Terrain topography
8. Clear of traffic/obstacles
9. System status
10. Flight warnings/cautions/advisories
11. Navigation compliance cues
12. Optimum airspeed
13. Optimum heading
14. Threat condition
15. Local barometric pressure
16. Altimeter barometric pressure setting
17. Low altitude cue
18. Low airspeed cue
19. High angle of attack cue
20. High yaw rate cue
21. Spin recovery response required
22. Present G
23. Max G

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PHASE: EGRESS (8.0)
SEGMENT: RESPONSE TO THREAT (8.2)
DECISION: Determine threat degree (8.2.2)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:

1. High
2. Medium
3. Low
4. None
5. Unknown

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Threat position
3. Number of threat platforms/weapons per platform (surface/airborne)
4. Ownship position
5. Threat state of readiness
6. Susceptibility of threat to countermeasures/expendables
7. Availability of countermeasures (type and no.)
8. SEAD plan applicability
9. Meteorological conditions (present)
10. Availability of stand off jamming
11. Effectiveness of standoff jamming against threat
12. Availability of self protection jamming
13. Effectiveness of onboard jamming against threat
14. Topography in immediate vicinity
15. Topography along route of flight
16. Ordnance currently enroute to threat
17. Threat detection systems status
18. Ownship signatures which may be reduced (ie., out of burner)
19. Threat knowledge of ownship presence

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PHASE: EGRESS (8.0)
SEGMENT: RESPONSE TO THREAT (8.2)
DECISION: Determine threat imminence (8.2.3)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Engaged
2. Immediate
3. Probable
4. Possible
5. Remote

INFORMATION REQUIREMENTS:

1. Threat type/capabilities
2. Number of threat platforms/weapons per platform (surface/airborne)
3. Threat position
4. Ownship position
5. Threat detection systems status
6. Threat readiness posture
7. Topography in immediate vicinity
8. Topography along route of flight
9. Presence of RF energy radiating along route of flight
10. Presence of laser energy along route of flight
11. Automatic threat avoidance system status
12. Auto threat avoidance system selection/disable
13. Threat guidance phase (i.e., terminal, mid-course etc.)
14. Threat knowledge of ownship presence

PHASE: EGRESS (8.0)
SEGMENT: RESPONSE TO THREAT (8.2)
DECISION: Determine to avoid or suppress (8.2.4)
DECISION TYPE: II
CRITICALITY: 2

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Topography along route of flight
3. Weapons inventory
4. Optimum routing
5. P_k of threat envelope of threat
6. Percentage chance of successful avoidance (P_s)
7. System performance
8. Feasibility of avoidance (ie., impact on TOT)
9. Suppressive weapon(s) footprint(s)
10. Optimum routing
11. Optimum attack profile – suppression
12. Optimum weapons release point
13. Detection of ownship by threat RF/laser system
14. Targeting of ownship by threat RF/laser system
15. Threat position
16. Ownship position
17. Suppression weapon hand-off status (complete, in work, available)
18. Ordnance currently enroute to threat
19. SEAD plan applicability
20. Suppressive weapon selection
21. Munition time of flight
22. Threat knowledge of ownship presence

PHASE: EGRESS (8.0)
SEGMENT: RESPONSE TO THREAT (8.2)
DECISION: Determine optimum re-routing, as required (8.2.6)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Threat condition
2. Threat type/capabilities
3. Threat zones
4. Clear zones
5. Heading direct to next waypoint
6. Heading direct to FLOT penetration point
7. Route w/highest P_S to next waypoint
8. Route w/highest P_S to FLOT penetration point
9. Optimum altitude - P_S
10. Ground speed
11. FLOT penetration time
12. Time on target
13. Elapsed time/time to go
14. Threat knowledge of ownship presence
15. Areas likely to be defended
16. Directive instructions

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PHASE: EGRESS (8.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (8.3)
DECISION: Operate sensors (8.3.1)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Manual operation on all
2. Automatic operation on all
3. Combination manual/automatic operation

INFORMATION REQUIREMENTS:

1. Individual sensor mode of operation (auto or manual)
2. Sensor suite (synergistic) mode of operation (auto or manual)
3. Individual sensor status
4. Sensor suite interconnectivity status
5. Target acquisition alert
6. TKBS status
7. Targeting information – ownship generated
8. Threat information – ownship generated
9. Sensor footprint (individual)
10. Sensor footprint (suite)
11. Directive instructions
12. Recommended sensor configuration (TKBS)
13. Individual sensor sub-mode selected/available
14. Individual sensor gaze angle (elevation, azimuth)
15. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
16. Targeting information – externally provided
17. Threat information – externally provided

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PHASE: EGRESS (8.0)
SEGMENT: COORDINATED SENSOR ACTIVITIES (8.3)
DECISION: Interpret sensor data/information (8.3.4)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Surface proximity
2. Planned route of flight
3. Present routing
4. Optimum routing
5. Significant topographical features
6. Spatial orientation imagery
7. Spatial orientation graphics
8. Target(s) cueing
9. Target location
10. Display format availability
11. Attitude
12. Flight member position
13. Target track
14. Target(s) ID/classification
15. Highest threat target(s) – priority
16. Preplanned target data
17. Target of opportunity data
18. Coincidence of multiple sensor target designation
19. Bearing/distance/rate of multi-sensor designation error
20. Ownship position
21. Externally obtained ownship positional information
22. Individual sensor status
23. Externally provided targeting information
24. Directive instructions
25. On-call uncorrelated processed individual sensor data/information
26. Ownship big picture relationships (terrain, friendly forces, threats, targets, etc.)
27. Threat imminence
28. Threat degree
29. Recommended action(s)
30. Imminent catastrophic event warning (ie., ground warning, missile/bullet impact, etc.)
31. Battle damage assessment
32. Flight plan compliance (early, late, etc.)
33. Inflight mission planning information
34. Flight member status
35. Externally provided intelligence information
36. Significant meteorological conditions

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PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY (8.4)
DECISION: Perform target acquisition (8.4.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Utilize active sensor(s) only
2. Utilize passive sensor(s) only
3. Utilize onboard smart weapons
4. Utilize combination of active and passive sensors
5. Utilize external source targeting information
6. Utilize navigation system
7. Utilize visual scan
8. Utilize automatic acquisition system

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Sensor image prediction
3. Actual sensor image
4. Perspective view (anticipated)
5. Actual perspective view
6. Elapsed time/time to go
7. Distance to target
8. Ownship position
9. Target location
10. Target cueing (sensor to sensor)
11. Sensor footprint (individual)
12. Achievement of ownship to target line of sight
13. Ownship distance from initial point to target
14. Distance from initial point to target
15. Individual sensor status
16. Weapon status
17. Weapons delivery system status
18. Geographical relationship (i.e., landmarks)
19. Target cueing (sensor/navigation system to eyeball)
20. Anticipated target signature
21. Source of externally provided targeting information
22. Accuracy of externally provided targeting information
23. Significant topographical features
24. Coincidence of multiple sensor target area localization
25. Bearing/distance/rate of multi-sensor localization error
26. Weapon selected
27. Weapon mode selected
28. Meteorological conditions (present)
29. Threat knowledge of ownship presence
30. Equivalent illumination/luminance levels
31. Individual sensor FOV/FOR available/selected
32. Individual sensor magnification available/selected

(continued on next page)

INFORMATION REQUIREMENTS (continued):

- 33. Individual sensor auto target acquisition available/selected
- 34. Data link status
- 35. System status
- 36. Weapons system master mode
- 37. Navigation system/sensor correlation/error
- 38. Indication of automatic acquisition requirement
- 39. Specific targets acquired by other flight members
- 40. Specific targets assigned to/by other flight members
- 41. Specific targets assigned to/by ground/control elements

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PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY (8.4)
DECISION: Perform target identification/classification (8.4.3)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Yes – that is the enemy and I am allowed to attack
2. Yes – that is the enemy but I am not allowed to attack
3. No – that is not the enemy
4. Delay decision

INFORMATION REQUIREMENTS:

1. Automatic target recognition system decision/confidence level
2. NCTR/PNCTR decision
3. External source verification of initial identification
4. PELTS decision/confidence level
5. Sensor image prediction
6. Actual sensor image
7. Target location
8. Weapons delivery system status
9. Target shape, signature, albedo
10. Expected target shape, signature, albedo for comparison
11. Indication of auto target acquisition and NATO identification
12. Target of opportunity attack criteria (prebriefed) [also called rules of engagement]

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PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY (8.4)
DECISION: Perform target designation (8.4.4)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:

1. Fixed position track – navigation system
2. Mobile track – weapons system
3. Multi-sensor track
4. Visual track

INFORMATION REQUIREMENTS:

1. Target designator control assignment position
2. Coincidence of multiple sensor target designation
3. Bearing/distance/rate of multi-sensor designation error
4. On-call uncorrelated processed individual sensor data/information
5. Indication (ie., symbology) of weapons system receipt of designation command
6. Overlay of designation spot in relation to target
7. Mobile track command accomplishment
8. Position of target designator control (cross hairs) in relation to intended target
9. Location of highest sensor track potential on target
10. Azimuth/elevation of sensor centroid when slewed by target designator control
11. Forced/auto correlation active
12. Sensor footprint (suite)
13. Achievement of ownship to target line of sight
14. Conformation of visual track with navigation/sensor track
15. Automatic acquisition, ID and designation cycle accomplishment indication
16. Indication of auto acquisition, ID, and hand-off to designation cycle difficulty
17. Specific targets designated by other flight members
18. Specific targets assigned to/by other flight members
19. Specific targets assigned to/by ground/control elements

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PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY (8.4)
DECISION: Select weapon (8.4.5)
DECISION TYPE: 1
CRITICALITY: 2
ALTERNATIVES:
1. Weapon 1
2. Weapon 2
3. Weapon n
4. Automatic selection allowed

INFORMATION REQUIREMENTS:

1. Weapons onboard - type/model
2. Weapons onboard - quantity each location
3. Weapon status
4. Release program selected (singles, pairs, ripple, interval, sequence, etc.)
5. Delivery mode selected
6. Attack plan
7. Weapon delivery envelope
8. Armed/safe status
9. System status

PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY (8.4)
DECISION: Select weapon mode (8.4.6)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:
1. Weapon mode – automatic
2. Weapon mode – 1
3. Weapon mode – 2
4. Weapon mode – n

INFORMATION REQUIREMENTS:

1. Modes available
2. Mode applicability to assigned/selected target
3. Mode operability
4. Weapon mode delivery envelope
5. Release program selected (singles, pairs, ripple, interval, sequence, etc.)
6. Delivery mode selected
7. Weapon mode selected
8. Armed/safe status
9. Weapon rate of fire
10. Manual mil setting(s) selected/available

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PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY (8.4)
DECISION: Execute weapon delivery maneuver (8.4.7)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Delivery mode selected
2. Delivery modes available
3. Range to target (horizontal)
4. Time to target
5. Time on target (assigned)
6. Sensor footprint (individual)
7. Armed/safe status
8. Min/max delivery altitude
9. Min/max delivery airspeed
10. Min/max delivery range
11. Min/max delivery G-loading
12. Optimum delivery altitude
13. Optimum delivery airspeed
14. Optimum delivery range
15. Optimum delivery G-loading
16. Target location
17. Flight member position
18. Angle of attack
19. Airspeed
20. Altitude (AGL/MSL)
21. Heading
22. Attitude
23. Ownship slant range to target
24. Ownship position
25. Significant topographical features
26. Threat imminence
27. Threat degree
28. Weapon mode delivery envelope
29. Ownship performance degradations (ie., battle damage)
30. Ownship to target line of sight requirement(s)
31. Munition time of flight
32. Directive instructions
33. Threat knowledge of ownship presence
34. Standby (to maneuver) cue
35. Pull up cue
36. Automatic target attack system engagement indication
37. Wind-corrected steering to target
38. High angle of attack cue
39. High yaw rate cue
40. Present G
41. Max G

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PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OR OPPORTUNITY (8.4)
DECISION: Commit weapon (8.4.8)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Automatic execution
2. Manual execution at maximum range – computer solution
3. Manual execution at minimum range – computer solution
4. Manual execution at heart of envelope – computer solution
5. Manual execution at preplanned point – manual solution

INFORMATION REQUIREMENTS:

1. Delivery mode selected
2. Wind-corrected steering to target
3. Flight path to release point
4. Precise instant for manual release (shoot cue)
5. Execution accomplishment indication
6. Munition time of flight
7. Automatic mode weapons delivery solution indication (cueing)
8. CCIP/CCRP mode weapons delivery solution indication (cueing)
9. Slant range
10. Target altitude
11. Winds at target
12. Horizontal range
13. Altitude (AGL/MSL)
14. True airspeed
15. Attitude
16. Flight path
17. Standby (to release) cue
18. Pull up cue
19. Dud cue
20. G-loading
21. Angle of attack
22. Threat imminence
23. Threat degree
24. Directive instructions
25. Threat knowledge of ownship presence
26. Automatic target attack system engagement indication

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PHASE: EGRESS (8.0)
SEGMENT: CONDUCT ATTACK(S) ON TARGET(S) OF OPPORTUNITY (8.4)
DECISION: Determine target damage (8.4.11)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Visual observation – self
2. Onboard sensor observation
3. External sensor observation
4. Airborne visual observation – other
5. Ground visual observation – other
6. Munition impact point
7. Munition activation, high order
8. Cessation of emission from target (ELINT/SIGINT)

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PHASE: EGRESS (8.0)
SEGMENT: NAVIGATE (8.5)
DECISION: Adjust flight plan, as required (8.5.7)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

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PHASE: EGRESS (8.0)
SEGMENT: NAVIGATE (8.5)
DECISION: Perform navigation system update (8.5.9)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Visual check acceptable (within tolerance)
2. System check – accept
3. System check – reject

INFORMATION REQUIREMENTS:

1. Visual position
2. INS position
3. GPS position
4. TRN position
5. X/Y position of given (selected) points
6. Computed distance error
7. Computed direction of error
8. Drift rate (distance/unit of time)
9. Sensor selected for update (radar, fly over (human eye), HUD, TACAN, etc.)
10. System acceptance of accept/reject decision
11. Auto advisory that navigation system is in need of update [i.e., drift rate interlock – or – auto multi-sensor correlation] or is being updated
12. Assurance that designated position is same as x,y position (i.e., navigation and sensor both referencing same point)

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PHASE: EGRESS (8.0)
SEGMENT: COMMUNICATE (8.6)
DECISION: Set EMCON (8.6.5)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

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PHASE: CLIMB (9.0)
SEGMENT: AVIATE (9.1)
DECISION: Control aircraft operation and flight (9.1.2)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum altitude
15. Optimum fuel flow
16. Ground speed
17. Optimum heading
18. Altimeter barometric pressure setting

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PHASE: CLIMB (9.0)
SEGMENT: RENDEZVOUS (9.3)
DECISION: Determine/control closure (9.3.2)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Desired rate of closure
2. Rate of closure
3. Distance between flight members
4. Disengagement opportunities/options
5. Joiner's indicated airspeed
6. Leader's indicated airspeed
7. Sideslip
8. Speedbrake/lift degradation device position
9. Power setting
10. Flight member position

PHASE: CLIMB (9.0)
SEGMENT: RENDEZVOUS (9.3)
DECISION: Determine/control bearing (9.3.3)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Desired bearing line – constant
2. Desired bearing line – curvilinear
3. Actual bearing from leader
4. Leader's rate of turn

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PHASE: CLIMB (9.0)
SEGMENT: RENDEZVOUS (9.3)
DECISION: Determine/control altitude (9.3.4)
DECISION TYPE: II
CRITICALITY: 4

INFORMATION REQUIREMENTS:

1. Leader's altitude
2. Desired ownship altitude
3. Altitude (AGL/MSL)
4. Vertical velocity change(s)
5. Position of horizon
6. Engine thrust available

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PHASE: CLIMB (9.0)
SEGMENT: NAVIGATE (9.4)
DECISION: Adjust flight plan, as required (9.4.7)
DECISION TYPE: II
CRITICALITY: 5

INFORMATION REQUIREMENTS:

1. Elapsed time/time to go
2. Fuel state
3. Fuel required
4. Fuel flow
5. Ground speed
6. Optimum altitude - P_s
7. Optimum indicated Mach - P_s
8. Present routing
9. Optimum routing
10. Distance to next waypoint
11. Distance to station
12. Distance from station to home (total mission distance)
13. Time to next waypoint at present ground speed
14. Time to next waypoint at altered ground speed
15. Fuel to next waypoint at present ground speed and altitude
16. Fuel to next waypoint at altered ground speed and altitude
17. Time to station at present ground speed
18. Time to station at altered ground speed
19. Fuel to station at present ground speed and altitude
20. Fuel to station at altered ground speed and altitude
21. Threat condition
22. System performance
23. Directive instructions
24. Time of day (local/zulu)
25. Winds aloft
26. Optimum altitude - max range
27. Optimum Mach - max range
28. Optimum altitude - max endurance
29. Optimum Mach - max endurance
30. Vertical velocity
31. Fuel remaining at next waypoint
32. Fuel remaining at station
33. Fuel remaining upon recovery (as per plan)

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PHASE: CLIMB (9.0)
SEGMENT: COMMUNICATE (9.5)
DECISION: Set EMCON (9.5.5)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:

1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

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PHASE: RETURN TO FORCE (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Cruise/Trim aircraft (10.1.1)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Airspeed
3. Attitude
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum altitude
15. Optimum fuel flow
16. Ground speed
17. Optimum heading
18. Altimeter barometric pressure setting

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PHASE: RETURN TO FORCE (10.0)
SEGMENT: AVIATE (10.1)
DECISION: Select pilot relief mode (10.1.2)
DECISION TYPE: I
CRITICALITY: 4
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple – External
8. Couple – auto onboard

INFORMATION REQUIREMENTS:

1. Altitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: CRUISE OUT (10.0)
SEGMENT: RETURN TO FORCE (10.1)
DECISION: Set formation (10.1.4)
DECISION TYPE: 1
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Loose cruise
4. Combat spread
5. Trail
6. Box
7. Timed sequence
8. As directed

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position

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PHASE: RECOVERY (11.0)
SEGMENT: AVIATE (11.1)
DECISION: Select pilot relief mode (11.1.2)
DECISION TYPE: I
CRITICALITY: 3
ALTERNATIVES:

1. Attitude hold
2. Altitude hold-barometric
3. Altitude hold-AGL
4. Heading hold
5. Auto/manual trim/throttles
6. None
7. Couple - External
8. Couple - auto onboard

INFORMATION REQUIREMENTS:

1. Attitude (AGL/MSL)
2. Heading
3. Ground speed
4. Present pilot relief mode status
5. Certification of new mode selection
6. Attitude
7. Pilot fatigue level
8. Pilot workload
9. Directive instructions
10. Ownship position
11. System performance
12. Flight control system operability

PHASE: RECOVERY (11.0)
SEGMENT: AVIATE (11.1)
DECISION: Perform aircraft descent (11.1.5)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Attitude
2. Altitude (AGL/MSL)
3. Airspeed
4. Heading
5. Angle of attack
6. Vertical velocity
7. Clear of traffic/obstacles
8. Engine performance
9. Hydraulic status
10. Pneumatic status
11. Flight warnings/cautions/advisories
12. Navigation compliance cues
13. Optimum airspeed
14. Optimum vertical velocity
15. Optimum heading
16. Local barometric pressure
17. Altimeter barometric pressure setting

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PHASE: RECOVERY (11.0)
SEGMENT: AVIATE (11.1)
DECISION: Set recovery formation, as required (11.1.6)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:

1. Parade
2. Cruise
3. Trail
4. Spread
5. Separate (individual recoveries)

INFORMATION REQUIREMENTS:

1. Cloud cover – present/expected
2. Visibility – present/expected
3. Turbulence – present/expected
4. Capability of flight member (flight member/leader)
5. Sensor status
6. EMCON status
7. Threat condition
8. Briefed formation
9. Sun/moon angle (elevation)
10. Percentage illumination (ambient/artificial)
11. Air traffic
12. Flight member position
13. Directive instructions
14. Recovery signal
15. Traffic congestion in marshal
16. Recovery conditions
17. Recovery mode
18. BRC
19. Time of day (local/zulu)
20. Ship location

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PHASE: RECOVERY (11.0)
SEGMENT: AVIATE (11.1)
DECISION: Interpret multi-sensor correlation data (11.1.7)
DECISION TYPE: II
CRITICALITY: 3

INFORMATION REQUIREMENTS:

1. Surface proximity
2. Planned ship rendezvous point
3. Ship location
4. Optimum routing
5. Spatial orientation imagery
6. Spatial orientation graphics
7. Cueing to ship
8. Cueing to assigned fix
9. Display format availability
10. Attitude
11. System status
12. Recovery status (extant at ship)
13. Ship's BRC
14. Final approach fix location
15. Final approach heading
16. Coincidence of multi-sensor data
17. Bearing/distance/rate of multi-sensor correlation error
18. Ownship position
19. Directive instructions
20. Externally provided recovery information
21. On-call uncorrelated processed individual sensor data/information
22. Ownship big picture relationships (marshal/recovery sequence, etc.)
23. TKBS recommended action(s) for recovery
24. Inflight mission planning information
25. Flight member status
26. Significant meteorological conditions
27. Self-contained glide slope/path information

PHASE: RECOVERY (11.0)
SEGMENT: AVIATE (11.1)
DECISION: Perform landing (11.1.14)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Glidepath - optimum
3. Glidepath - present deviation from optimum
4. Course - optimum
5. Course - present deviation from optimum
6. Vertical velocity
7. Angle of attack - optimum
8. Angle of attack
9. Range to touchdown
10. Altitude (AGL/MSL)
11. Aircraft weight - total
12. Fuel weight
13. Bingo fuel state
14. Acknowledgement of ready deck
15. ATC clearance/instruction
16. BRC
17. Final bearing
18. Significant meteorological conditions at ship
19. Air traffic
20. Landing systems status
21. Tailhook position
22. Tailhook snubber pressure
23. Aircraft control surface configuration
24. Recovery area battle damage

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PHASE: RECOVERY (11.0)
SEGMENT: AVIATE (11.1)
DECISION: Determine requirement for missed approach/waveoff (11.1.15)
DECISION TYPE: II
CRITICALITY: 1

INFORMATION REQUIREMENTS:

1. Directive instructions
2. Optimum fly-away profile
3. Optimum fly-away aircraft configuration
4. Angle of attack – optimum
5. Angle of attack – present deviation from optimum
6. Power setting
7. Recovery pattern constraints
8. Tanker availability/position/give
9. Bingo/divert field position (x,y)
10. Optimum bingo profile
11. Air traffic
12. Recovery area battle damage
13. Fuel state
14. Capability to reach bingo landing site

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PHASE: RECOVERY (11.0)
SEGMENT: NAVIGATE (11.2)
DECISION: Comply with clearance instructions (11.2.5)
DECISION TYPE: 1
CRITICALITY: 3
ALTERNATIVES:
1. Comply strictly with clearance instructions
2. Comply generally with clearance instruction
3. Do not comply
4. Delay decision

INFORMATION REQUIREMENTS:

1. Time of day (local/zulu)
2. Time assigned to be somewhere
3. Location of assigned position (to be)
4. Ship location
5. Ownship position
6. Ownship position relative to ship
7. BRC
8. Directive instructions
9. Standard/non-standard recovery
10. Standard instrument recovery
11. Recovery instructions
12. Charlie time
13. Time required to traverse distance to achieve charlie time
14. Delta time
15. Local barometric pressure
16. Altimeter barometric pressure setting
17. Ship identification
18. Winds aloft
19. Wind over deck
20. Glideslope
21. Line-up
22. Angle of attack
23. Flight warnings/cautions/advisories
24. Optimum heading
25. Assigned heading
26. Assigned altitude
27. Assigned airspeed
28. CCA guidance
29. Recovery conditions
30. Recovery mode
31. Recovery signal
32. EMCON condition
33. LSO guidance
34. Optical landing system in use
35. Deck status (ready, fouled, etc.)
36. Capability to comply
37. Wisdom of compliance
38. TKBS recommendation

PHASE: RECOVERY (11.0)
SEGMENT: COMMUNICATE (11.3)
DECISION: Set EMCON (11.3.4)
DECISION TYPE: I
CRITICALITY: 5
ALTERNATIVES:
1. Total EMCON
2. No EMCON - emissions free
3. Comm tight - sensors free
4. Comm free - sensors tight

INFORMATION REQUIREMENTS:

1. Briefed plan
2. Allowable exceptions (i.e., safety of flight)
3. Threat condition
4. Radar transmit status
5. Voice comm transmit status
6. Link transmit status
7. Navigation transmit status
8. AGL/MSL measuring device transmit status
9. Jammer response status
10. CIT response status
11. Laser activity status

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