a. The R-Hour message is sent out in the clear as a FLASH message over all available communications, both US and NATO, and through an authentication code system it authorizes both the NATO commander to execute approved nuclear strike plans, and the US custodian to release nuclear weapons to the NATO commander. The message also provides code words which give the combinations to PAL locks on the warheads. It may permit the exclusion of Satellite nations or certain categories of targets from planned strikes. R-Hour does not permit exclusion of the USSR. The procedures do not provide for selective authorizations as to delivery units, localised engagements, numbers of targets, or other restrictions.

b. No action on R-Hour can be taken by SACEUR until USCINCEUR receives from JCS an Emergency Message One A (EM-1A) authorizing the use of nuclear weapons and additional messages authorizing release of nuclear weapons to NATO allies and operation from UK bases.

c. The SSP strikes are integrated into and coordinated with the SIOP strikes (Fig. 2). R-Hour procedures are logically inseparable from E-Hour and the SIOP strikes. There can, realistically, be no flexibility in R-Hour procedures and these procedures have no applicability to a controlled "flexible response" situation. NATO must have a general war posture and a simple procedure, although not one that is accident prone, for initiating its strikes with the best possible efficacy.

6. S-Hour Procedures. S-Hour procedures are designed for selective release of weapons in conflicts at the other end of the spectrum from general war. In such situations, communications and control should permit selective firings on a quick reaction basis. Existing deficiencies cited below could be overcome through direct and continuing contact between all echelons of military and political command.

a. S-Hour procedures have proven too slow. The S-Hour procedures have been established by SACEUR/USCINCEUR to permit authorized commanders to request the release of a single or multiple number of nuclear weapons for employment against a specified target(s), to provide SACEUR/USCINCEUR with a means to approve or direct such strikes, and to authorize US custodians to transfer a single or stipulated number of weapons to designated commanders. Request messages (SU-1) include the type of mission, justification, positions of releasing and executing commanders, number and type of weapons, DGZs, HOBs, TOTs, and delivery units. This complex message is encrypted SECRET and sent with FLASH precedence. The implementing message (SU-1A) by SACEUR/USCINCEUR is also encrypted and designates the releasing

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Figure 2

SPECIAL HANDLING REQUIRED,
NOT RELEASABLE TO FOREIGN
NATIONALS

commander, executing commander, the USCINCEUR authenticating code word, PAL enabling numerical combination, number and types of weapons, DGZs, HOBs, TOTs, and delivery units. The extensive time delays inherent in message preparation, encryption, and communication routing form a serious deficiency which has been vividly highlighted by exercises to date. This deficiency, however, in an isolated confrontation can be overcome.

b. Formalized "S-Hour procedures" do not exist between SACEUR and national authorities. SACEUR has, without specific guidance from NATO and US authorities, established S-Hour selective releases for use by his military forces. The existing procedures do not provide for coordination and authorization by higher authorities, and no consensus exists anywhere on criteria for first use. There are no established procedures for timely intelligence buildup for top level decision. The potential lack of empathy between national authorities and military commanders may increase the delay in reaction time, and merely taking the step of requesting release will add to the time delays described in the preceding paragraph, thus drastically reducing the effectiveness of the S-Hour procedures.

c. The S-Hour procedures were designed for use in aggressions less than general war, but they are inadequate for timely release of classes of weapons, or for selective use of many nuclear weapons during large scale actions short of general war. The procedures, however, provide such a tight, centralized control that, during an escalation in areas, or forces, or following an enemy retaliation, the present system will break down. It is doubted that release can operate to match the speed of enemy movement.

7. A Gap Exists between R- and S-Hour. R-Hour is designed for general nuclear war; other than minor modifications, changes for flexibility would degrade its usefulness. At the other end of the spectrum, S-Hour procedures could conceivably be made effective for controlling the firing of a single weapon or a few specific weapons. However, there is a requirement for a concept for releases between the two extremes. Such a concept, which for shorthand purposes we will call "T-Hour," would permit larger, yet still selective, releases of nuclear weapons under many options for contingencies less than general war. After such a release a commander would be confronted only with military considerations, and not with the continuing political aspects of subsequent specific releases, except for observing the restraints imposed at time of release.

TACTICAL AIR

8. Flexibility of Tactical Air Forces. There are 998 Nuclear Strike and 846 Conventional Attack aircraft assigned to SACEUR (Fig. 3). Both in quantity and quality these forces should be adequate to support a developing crisis and concurrently maintain prescribed nuclear alert postures; vulnerability and dispersal is covered in the next paragraph. The following problem areas would, to some degree, adversely affect the effectiveness of tactical air to respond flexibly to all situations.

a. There is currently a limited stockpile of low yield nuclear weapons for air delivery available in Europe but action is under way to increase the number appreciably (Fig. 4).

b. As for sustained conventional operations, the US non-nuclear ordnance inventory appears adequate (Fig. 5), but non-US tactical air capability is a known deficiency. Specific data on the non-US conventional munition inventory was not available to Project Id for this initial report.

c. Convertibility of aircraft from nuclear to conventional munitions, or vice versa, involves time delays.

9. Tactical Air Survivability and Dispersal. Current deployment of tactical air forces in the Central Region and the United Kingdom presents a concentration of the forces on relatively few airbases. These 1380 nuclear strike and conventional attack aircraft are deployed on 37 airbases (average of 37 per base).

a. The US tactical aircraft (other than air defense and reconnaissance aircraft) in USAFE Central Region plus UK deployment (Fig. 3) are all assigned to or planned for nuclear missions, but have capability of responding to a full range of conventional operations if so converted. These 441 aircraft are situated on seven main bases (63 per base). A national (USAFE) dispersal plan directs that, with the implementation of Reinforced Alert, a portion of these aircraft will be dispersed to thirteen additional pre-selected bases.

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AVAILABILITY OF STRIKE AND ATTACK AIRCRAFT*

	Nuclear Strike	Conventional Attack**
Belgium	25	75
Canada	72	72
France	36	164
Germany	72	150
Netherlands	44	43
UK (Canberra)	48	0
US (Central Command)	441	0
Central Command Total	(738)	(504)
UK V-Force	138	
Greece	50	50
Turkey	18	146
Italy	0	146
US (Southern Command)	54	0
Total Assigned SACEUR	998	846

* Includes all nuclear strike and conventional attack aircraft assigned to SACEUR. Does not include national aircraft not assigned. Status shown as of March 1964.

** Assignment of aircraft to the attack role (rather than strike) is based on the SHAPE Air Order of Battle. The same aircraft types are used for the nuclear strike mission assignments.

Figure 3

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NON-NUCLEAR ORDNANCE INVENTORY - USAFE
31 March 1964

TYPE	QUANTITY IN THEATER STOCKPILE
CBU-1A Frag, Personnel	11,160
CBU-2A Frag, Material	11,281
BLU-1/B Napalm	8,700
M-116A2 Napalm	1,306
M-117 750# Bomb	45,555
AGM-12B Bullpup	6,610
2.75 Rx	134,000
20mm Ammunition	8,200,000

No information on NATO Inventories.

Figure 5

SPECIAL HANDLING REQUIRED,
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NATIONALS

When implemented, the dispersal plan will result in the 441 US aircraft being deployed on 20 airbases (22 per base). In addition to the approved dispersal bases, USAFE has identified 16 bases, not being used by other tactical air units, as suitable for additional deployment of US aircraft in this region. If four strike aircraft per base were adopted as a theoretical maximum dispersal goal, the 441 US strike aircraft would require a total of 77 bases (70% of the aircraft assumed to be available).

b. In Central Region there are 9 airfields on which non-US NATO strike aircraft are based. Seven of these are located in Germany and one each in the Netherlands and Belgium. There are 250 nuclear weapons at these bases. Because of the impressive facilities required for safety and security of these nuclear weapons, it is logical to assume that the Soviets have them targeted as nuclear strike bases. There is thus a requirement to disperse these aircraft and weapons to many more bases during a period of warning of probable Soviet attack. Dispersal planning has been directed by SACEUR. However, there are several factors which inhibit realistic execution. These are:

(1) The custody problem. The fastest way to disperse is to fly each aircraft with its bomb load to the dispersal base. This is prohibited prior to release of the weapon by the President of the US because the non-US pilot would gain possession (temporarily) of a weapon. The next best method is to fly the bombs to dispersal bases in US cargo aircraft. This is not now feasible because the US has no cargo aircraft programmed for this task. The third method is to truck the weapons to dispersal bases. Trucking is, of course, a great deal slower, and therefore undesirable in that the strike aircraft are separated from their weapons for several hours during a period of alert. For all these methods, once the weapons are moved from one location to several locations, the requirements for secure storage facilities and US guards and custodial personnel are greatly increased. This can only be solved by increasing peacetime storage and security forces, or by relaxation of requirements for security during periods of alert.

(2) The control-communication problem. Control of the release of nuclear weapons is tightly centralized; QRA aircraft bases should have direct communications to SHAPE. The many bases which could be used for dispersal should then have installed and operational QRA communications in order for SACEUR to retain the present level of control. The cost of communications and availability of personnel to man them inhibits the degree of dispersal possible.

(3) The logistical support problem. Support for the maintenance of the dispersed aircraft and weapons must also be either pre-stocked or dispersed at time of aircraft dispersal. This raises the requirement for maintenance and ground crew personnel as well as for spare parts and shops.

c. In short, realistic dispersal planning for non-US NATO nuclear strike aircraft is possible if during alert we relax US storage and security requirements to a degree, and if NATO is willing to pay the cost in personnel and facilities. Except for the UK Bomber Command dispersing its own bombs and bombers, there is not now a viable non-US strike aircraft dispersal plan.

d. If the above problems relating to dispersal of non-US strike aircraft can be solved, tactical air vulnerability could be somewhat reduced. Using the same criteria for the theoretical maximum dispersal as for the US forces, the 297 non-US strike aircraft in the Central Region (UK aircraft based in UK are already dispersed) a total of 52 airbases would be required. Practical resource allocation will undoubtedly limit dispersal to somewhat higher density than four aircraft per base.

e. The 504 conventional attack aircraft (non-US) in the Central Region are located on only eleven airbases. There are no overriding problems to preclude further dispersal of these forces, and a large number of available airfields could be employed in an emergency by these aircraft with little or no additional resource expenditure. The degree of dispersal required and desirable for conventional attack aircraft is different than that for nuclear strike forces. In general, the criteria for conventional dispersal should strive for one squadron per base. Such a deployment will permit reasonable survivability with adequate operational efficiency in conducting conventional missions. Such a dispersal would require no more than an additional fifteen bases for non-US conventional forces. Arbitrary assignment of CSAF forces to the conventional mission (or mission exchange with theater forces) would require an additional twenty-two bases.

f. As shown in Figure 6, an adequate number of airfields is available to support a theoretical maximum dispersal. The primary objective is to increase survivability for the nuclear strike force and collocation with other air units is accepted and encouraged for economy reasons. If implemented to the level of four strike aircraft per base, a total of 129 separate targets would require neutralization to destroy the SACEUR nuclear strike force in the Central Region.

THEORETICAL MAXIMUM DISPERSAL OF
SACEUR STRIKE/ATTACK FORCE CENTRAL REGION PLUS UK

	Aircraft		Required Airbases	Remarks
	US	Non-US		
UK Bomber Command		138	30	Estimated Actual Dispersed Bases
Nuclear Strike	441	297	129	4 a/c per airbase 70% aircraft availability
Conventional Attack	396*	504	48	*US forces are CSAF arbitrarily assigned conventional mission 1 squadron per airbase.
Totals	837	939	207	
Total Available Airbases			333	6000 ft Hard Surface Runway 77 bases are in France

Figure 6

Adequate survivability may also exist for tactical air in support of conventional operations prior to escalation to general nuclear war. Available resources prohibit dispersal to the extent shown in Figure 6, but an intermediate posture between current basing and the theoretical maximum is believed to be achievable.

g. Application of oncoming Pershing units to the QRA role, a matter now under consideration, could serve to reduce problems related to the convertibility and vulnerability of tactical air.

LAND FORCES

10. Posture Problems. There are at least two, perhaps three, problems of land force posture that are inherent to the EDP, and which appear particularly difficult.

a. The EDP quite properly directs the LANDCENT forces to conduct a mobile defense in the forward area. Whether the impending war turns out to be general, less than general, or a minor incursion, the field forces must deploy in essentially a single stance.

b. With this deployment, they defend. As shown recently in ACE CPXs and from our analysis of certain contingencies set forth in Part V of this report, a NATO counterattack leaves serious gaps in the planned defenses.

c. In defense, the missions of LANDCENT forces are to hold or to give ground slowly, and to determine enemy capabilities and apparent intentions. If the attacker's goal is judged to be "the immediate military conquest of Europe," the EDP defines his actions as the threshold to general war.

d. Many past and recent studies and games indicate that in the extended mobile defense, LANDCENT's divisions can receive decimating casualties in an extended engagement which involves the use of tactical nuclear weapons. To improve field force survivability would require changes in dispersion and tactics from present postures and doctrines.

e. To assume a mobile defense posture and then quickly to change to more adequate dispersal for nuclear war, appears infeasible, especially after the enemy has closed conventionally. Yet the EDP requires LANDCENT to take up the best possible non-nuclear defense.

f. Soviet and Satellite divisions can be concentrated to provide superior conventional force at any selected point on the central front, either in a surprise deployment or a deliberate deployment which gives strategic warning, and can execute a major penetration. LANDCENT's reserves are marginal, their operational mobility is slow, as are relative mobilization rates.

g. The Project Id study group has not yet determined what posture and tactics have the best chance of providing a favorable casualty exchange rate during tactical nuclear war. Parenthetically, we doubt that the Soviets have solved this problem, either. A fully dispersed formation may succumb to infiltration, and mobile and hugging attack tactics may not be supportable by NATO logistics and replacement systems, especially when themselves under nuclear attack.

h. In sum, especially in the context of a developing crisis, the posture problems stem from the possibility that the NATO land forces, under the Forward Defense, may be required for some time to defend conventionally, and hence:

(1) Cannot respond easily to demands for a flexible deployment for some other purpose; and if so responding, seriously weaken EDP positions.

(2) Are, under such circumstances, apparently not able to defend successfully in specific areas and without the use of nuclear weapons against a well-executed Warsaw Pact conventional attack.

(3) Are required to take up a posture which may not be able to make a belated transition from an initial conventional phase to a reasonably successful tactical nuclear phase.

11. Land Force Deficiencies. The following deficiencies are revealed when LANDCENT's forces are analyzed against their EDP missions:

a. Many of the divisions and supporting national troops are quite poorly deployed in peacetime to respond rapidly to a NATO alert. From their home bases to their EDP battle positions requires many days to attain full operation readiness, especially in NORTHAG. Of course, this problem also confronts Warsaw Pact forces, although to a lesser degree.

b. The forces themselves are deficient, both as to quantity and quality. Although the US units are rated "excellent," and one