

CHAPTER 5

CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

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5.1 CUMULATIVE EFFECTS

A cumulative effects analysis within an EIS should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action (and alternatives) if they overlap in space and time (CEQ 1997). Cumulative effects are most likely to arise when a proposed action is related to other actions that could occur in the same location or at a similar time. Actions geographically overlapping or close to the proposed action would likely have more potential for a relationship than those farther away. Similarly, actions coinciding in time with a proposed action would have a higher potential for cumulative effects.

To identify cumulative effects, the analysis needs to address three questions:

1. Could affected resource areas of the proposed action interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If one or more of the affected resource areas of the proposed action and another action could interact, would the proposed action affect or be affected by impacts of the other action?
3. If such a relationship exists, are there any potentially significant impacts not identified when the proposed action is considered alone?

5.1.1 Scope of Cumulative Effects Analysis

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time in which the effects could occur. This cumulative effects analysis includes the boundaries of the affected areas for the action alternatives (Alternatives B, C, and D). Actions not occurring within or near these are not considered in the analysis. The time frame for cumulative effects starts in early 2000 when airspace changes proposed under RBTI would most likely be implemented and would continue into the foreseeable future. Construction activities would not likely start until 2001. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies were the primary sources of information for identifying reasonably foreseeable actions.

This analysis considers the cumulative effects of Alternatives B, C, and D. Alternative A: No Action represents status quo conditions, and would form part of the existing environment. As evidenced by the analysis of environmental consequences in Chapter 4 of this EIS, Alternatives B and C are very similar; for this reason, they are treated in a combined fashion in this cumulative analysis.

Cumulative effects analysis also needs to consider the combined additive, or interactive impacts of the accumulation of all elements (refer to section 2.4.1) associated with a single action alternative (e.g., construction plus aircraft operations). In Chapter 4, each resource not only assesses the specific environmental consequences of individual elements, it also accounts for the combined effects of all elements. Since this aspect of cumulative effects was presented in Chapter 4, it will not be discussed further in this section.

5.1.2 Past and Present Actions

Known past and present actions that might result in cumulative effects are all Air Force activities. These past and present actions involve use of primary airspace, or secondary (intersecting) airspace included in one of the RBTI action alternatives (Table 5.1-1). The flight operations of each of these actions have been incorporated into the analysis in this EIS as part of the baseline conditions in the affected airspace environment for the No-Action Alternative and the action alternatives, then incorporated into the analysis for each of the alternatives. Sortie-operations of

Table 5.1-1 Past and Present Actions Already Considered in No-Action and Action Alternatives		
Action	Year Implemented	Relationship to RBTI
Stationing of 60 F-16s at Cannon AFB; removal of 99 F/EF-111s ¹	1995	<ul style="list-style-type: none"> ♦ F-16s use Pecos, Mt. Dora, and Bronco MOAs ♦ F-16s fly on eight MTRs that intersect or overlap with proposed IR-153 in Alternative D
Establish the Bronco MOA by consolidating Reese 1, 2, and 3 MOAs ²	1998	<ul style="list-style-type: none"> ♦ Dyess and Barksdale AFBs aircrews fly 1 percent of the sortie-operations in the Bronco MOA in all alternatives
Relocation and revision of MTR VR-1174/1574 to VR-1175/1176 in northern New Mexico	1998	<ul style="list-style-type: none"> ♦ VR-1175/1176 intersects and overlaps with portions of proposed IR-153 in Alternative D
Changes in type of F-16s at Cannon AFB and training by the Republic of Singapore Air Force ³	1998	<ul style="list-style-type: none"> ♦ Cannon and RSAF F-16s fly in Pecos and Bronco MOAs associated with Alternatives B, C, and D ♦ Cannon and RSAF F-16s fly in Mt. Dora MOA associated with Alternative D ♦ F-16s fly on eight MTRs that intersect or overlap with proposed IR-153 in Alternative D
Expand German Air Force Operations at Holloman AFB, New Mexico ⁴	1999-2000	<ul style="list-style-type: none"> ♦ GAF Tornado aircraft fly in Pecos and Mt. Dora MOAs ♦ GAF Tornado aircraft fly on an MTR that intersects or overlaps with proposed IR-178 in Alternatives B and C, with five MTRs that intersect or overlap with proposed IR-153 in Alternative D
Establishment of 13th Bomb Squadron (B-1s) at Dyess AFB ⁵	1997-2000	<ul style="list-style-type: none"> ♦ B-1s from 13th Bomb Squadron use airspace as do other Dyess AFB B-1s in Alternatives B, C, and D
¹ Source: USAF 1995 ² Source: USAF 1997b ³ Source: USAF 1998b ⁴ Source: USAF 1998a ⁵ Source: USAF 1996		

overlapping or intersecting airspace units with RBTI alternatives were added to obtain a combined total number of sortie-operations. Past and present actions affecting the RBTI primary airspace were also included within the total use. In each relevant instance, the aircraft noise, air emissions, and aircraft safety rates were integrated with those generated by the RBTI components. This approach applied to all resource categories, so the analysis of impacts presented in Chapter 4 also includes the cumulative effects of these past and present Air Force actions.

5.1.3 Future Proposed Actions

Three proposed actions warrant examination for cumulative effects. Two of the three proposed actions do not directly interact with aspects of any RBTI alternative. The third involves only some additional activities on MTRs associated with the RBTI alternatives. A fourth possible, but not proposed, action could involve flight activities on secondary MTRs within the RBTI study area.

NEW DROP ZONE, DYESS AFB

In addition to bombers, Dyess AFB also supports two squadrons of C-130 transport aircraft. A substantial portion of this squadron's mission involves accurately dropping equipment, food, and other supplies to support ground troops. To train for this mission, C-130 aircrews need to practice a variety of parachute and other drops. The Air Force is proposing to establish a new drop zone training area about 50 miles southwest of Dyess AFB to assist with training. The Air Force has prepared a Draft Environmental Assessment (USAF 1999) and preliminarily determined that the proposed drop zone would not result in any significant impacts. The proposed drop zone would not involve use of any of the same airspace associated with the RBTI alternatives, but would lie northeast of the Texon MOA. The C-130 would fly at 300 feet AGL to accomplish drop zone training, whereas the bombers using the proposed RBTI en route Electronic Scoring Site near Dyess AFB would fly at higher altitudes. The presence of the drop zone at or near the base would not alter the way in which bomber aircrews use the RBTI alternatives. No interaction would occur between the drop zone training and RBTI activities.

PROPOSED IR-323 IN UTAH

To improve low-altitude access to the Utah Test and Training Range (west of Salt Lake City), especially for bomber aircraft, the Air Force is proposing to establish a new MTR linked to the range. This proposal, while well outside the RBTI study area, would involve bombers from Barksdale and Dyess AFBs. Approximately 400 annual sortie-operations on the proposed MTR are projected for the bombers from these two bases. Other bomber units from Minot AFB, Ellsworth AFB, Mt. Home AFB, McConnell AFB, Robins AFB, and Whiteman AFB would also fly on the proposed MTR.

However, no interaction exists between the location of proposed IR-323 and the proposed RBTI action alternatives. The sortie-operations conducted by Barksdale and Dyess AFBs' bombers on proposed IR-323 would not be subtracted from the sortie-operations projected under any RBTI action alternative. Rather, use of proposed IR-323 would represent a continuation of training activities by Barksdale and Dyess AFBs' bombers in remote airspace units outside the RBTI study area. For the same reason, RBTI sortie-operations would not increase if proposed IR-323 were not established. No part of the proposed IR-323 activities would involve any airspace in the RBTI study area, nor would they alter the training operations of other (not from Barksdale and Dyess AFBs) users of RBTI primary and secondary airspace. Based on those factors, no cumulative effects would occur.

DEFENSE TRAINING INITIATIVE, CANNON AFB, NEW MEXICO

The Air Force is preparing environmental documentation for increasing the defensive training capability for combat aircrews. This initiative includes the proposed use of chaff and flares by F-16 aircraft from Cannon AFB in New Mexico and Texas in the Pecos/Taiban and Bronco MOAs with associated ATCAAs and the use of chaff on VR-100/125. Chaff consists of hair-thin strands of aluminum-coated silicon ejected by aircraft in order to counter enemy radar and electronic tracking systems. Defensive countermeasure flares (not like those used for light) are pellets of teflon and magnesium designed to burn for about 4 seconds after ejection from an aircraft. Flares "trick" heat seeking missiles by providing an alternative heat source to the targeted aircraft.

The Pecos/Taiban and Bronco MOAs and associated ATCAAs represent neither primary nor secondary airspace for RBTI, and VR-100/125 represents secondary airspace under RBTI alternatives.

Proposed chaff use on VR-100/125 would not increase the number of sortie-operations above that analyzed under RBTI Alternative D. Chaff use would not alter the altitudes used by aircraft in VR-100/125. For these reasons, no additive or cumulative effects would result from the interaction of the proposal and RBTI; environmental conditions in VR-100/125 would not differ from those associated with RBTI Alternative D alone.

GERMAN AIR FORCE (GAF) AIRCRAFT OPERATIONS, HOLLOMAN AFB, NEW MEXICO

The GAF has been conducting sortie-operations within airspace in the RBTI study area since 1992. In 1997, the Air Force proposed to establish a new MTR (IR-102/141) that would support the GAF need for low-altitude training. An Environmental Assessment (USAF 1997a) was completed in June 1997 for this new MTR, along with altitude and boundary expansion of the existing Talon MOA and establishment of an air refueling route. In 1999, the Air Force rescinded its decision to establish the low-altitude route; however, the Talon MOA and air refueling route proposals have proceeded.

Although the proposal to establish a low-altitude route was withdrawn, the need for GAF Tornados to conduct low-altitude training on an MTR may still exist. To meet this training need, the Air Force may, at some time, present a new MTR proposal that could include alternatives consisting of new routes, existing routes, or modifications to the original IR-102/141 proposal. The Air Force would prepare appropriate NEPA documentation for any proposal of this nature.

If one or more alternative MTRs fall within the RBTI study and interact with RBTI primary airspace, the potential for cumulative effects would exist. At this time, no proposal has been advanced and no specific MTRs are being considered, so assessment of potential cumulative effects under RBTI would be highly speculative and unwarranted. Should the Air Force at some time in the future consider a proposal for an MTR to support GAF training, the NEPA documentation related to that action will evaluate the cumulative effects (if any) between the MTR proposal and RBTI.

5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

NEPA requires that environmental analysis include identification of "...any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

For the RBTI action alternatives (Alternatives B, C, and D), most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary, or longer lasting, but negligible. Those limited resources that may involve a possible irreversible or irretrievable commitment are discussed below.

Implementing an RBTI alternative would require fuels used by aircraft and surface vehicles. The flight activities would result in fuel use for as long as the program continued. Flight activities and surface vehicles supporting aircraft maintenance and operations would use similar amounts of fuels, oils, and lubricants as at present.

Personal vehicles used by the additional personnel proposed to support the action would consume fuel, oil, and lubricants. The amount of these materials used would not likely exceed that currently used by these same individuals and their families. As such, the proposed action would not increase consumption of these resources. In addition, quantities of steel and other materials used in construction would be committed under the proposed action. The increase in the use of these materials would be minimal.