



Figure 2-18 Sub-route wider than existing route.

The centerline of substitute routes must be contained within controlled airspace [Figure 2-16], although substitute routes for off-airway routes may not be in controlled airspace. [Figure 2-17] Substitute routes are flight inspected to verify clearance of controlling obstacles and to check for satisfactory facility performance. If substitute routes do not overlie existing routes, or are wider than existing routes, map studies are required to identify controlling obstacles. [Figure 2-18] The format for describing substitute routes is from navigational fix to navigational fix. A minimum en route altitude (MEA) and a maximum authorized altitude (MAA) are provided for each route segment. Temporary reporting points may be substituted for the out-of-service facility and only those other reporting points that are essential for ATC. Normally, temporary reporting points over intersections are not necessary where Center radar coverage exists. A minimum reception altitude (MRA) is established for each temporary reporting point.

Tower En Route Control

Tower en route control (TEC) is an ATC program available to pilots that provides a service to aircraft proceeding to and from metropolitan areas. It links designated approach control areas by a network of identified routes made up of the existing airway structure of the NAS, which makes it possible to fly an IFR flight without leaving approach control airspace. [Figure 2-19] This service is designed to help expedite air traffic and reduces ATC and pilot communication requirements. The program is generally

used by non-turbojet aircraft operating at and below 10,000 feet but a few facilities, such as Milwaukee and Chicago, have allowed turbojets to proceed between city pairs. Participating flights are relatively short with a duration of two hours or less.

TEC is referred to as tower en route, or tower-to-tower, and allows flight beneath the en route structure. TEC reallocates airspace both vertically and geographically to allow flight planning between city pairs while remaining within approach control airspace. All users are encouraged to use the TEC route descriptions located in the CS when filing flight plans. [Figure 2-20] All published TEC routes are designed to avoid en route airspace, and the majority is within radar coverage.

Tower En Route Control Route Descriptions

The graphic depiction of TEC routes located in the CS is not to be used for navigation or for detailed flight planning because not all city pairs are depicted. The information is intended to show geographic areas connected by TEC. [Figure 2-19] Pilots should refer to the route descriptions for specific flight planning.

As shown in Figure 2-20, the route description contains four columns of information. The first column is the approach control area within which the departure airport is located, which are listed alphabetically. The second column shows the specific route, airway, or radial that is to be used. The third column shows the highest altitude allowed for