

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued October 1, 2001 Decided November 9, 2001

No. 00-1304

AT&T Wireless Services, Inc., et al.,
Appellants

v.

Federal Communications Commission,
Appellee

Northeast Communications of Wisconsin, Inc.,
d/b/a Cellcom,
Intervenors

Appeal from an Order of the
Federal Communications Commission

L. Andrew Tollin argued the cause for appellants. With him on the briefs were Michael Deuel Sullivan, Douglas I. Brandon, Carol L. Tacker and John T. Scott III.

Roberta L. Cook, Counsel, Federal Communications Commission, argued the cause for appellee. With her on the brief was Daniel M. Armstrong, Associate General Counsel.

Ronald J. Wiltsie II argued the cause for intervenors. With him on the brief were Michele C. Farquhar, Ronnie London, Donald J. Evans, Timothy Edward Welch, Russell D. Lukas and David L. Nace. David G. Leitch entered an appearance.

Before: Edwards, Rogers and Tatel, Circuit Judges.

Opinion for the Court filed by Circuit Judge Rogers.

Rogers, Circuit Judge: In the order on review, the Federal Communications Commission affirmed orders by the Bureau of Wireless Telecommunications granting a waiver of 47 C.F.R. s 22.925 for two years to permit AirCell, Inc. and cellular licensees that had entered into resale agreements with AirCell to provide airborne cellular telephone service. See *AirCell, Inc.*, 15 F.C.C. Rcd. 9622 (2000). Petitioners AT&T Wireless Services, Inc., Bell South Cellular Corp., SBC Wireless, Inc., and Cellco Partnership seek review of the Commission's order on three principal grounds.¹ First, they contend that the Commission violated its rules as well as the licensing scheme of the 1934 Communications Act by granting a waiver that modifies the licenses of existing licensees, and by failing to require AirCell to apply for a license to provide a new nationwide air-ground radio communications service. Second, they contend that the waiver was arbitrary and capricious insofar as it eviscerates the rule, contravenes Commission precedent, and violates Commission policy to proceed by rulemaking when changing rules affecting a broad segment of industry. Third, they contend that the Commission failed to provide a reasoned explanation for its conclusion that harmful interference was not likely to result from the AirCell system. We grant the petitions in part, remanding the case to the Commission for further explanation of one aspect of its waiver decision; otherwise we deny the petitions.

¹ See 47 U.S.C. s 402(a) (1991); *Capital Cities Communications, Inc. v. FCC*, 554 F.2d 1135, 1136 n.1 (D.C. Cir. 1976).

I.

Section 22.925 of the Commission's rules provides, in pertinent part:

Cellular telephones installed in or carried aboard airplanes, balloons or any other type of aircraft must not be operated while such aircraft are airborne (not touching the ground). When any aircraft leaves the ground, all cellular telephones on board that aircraft must be turned off.

47 C.F.R. s 22.925 (2000). Under s 1.3, the Commission has authority to waive its rules "if good cause therefor is shown." Id. s 1.3.

AirCell, Inc. began developing and testing a low-power cellular system installed on general aviation aircraft under a Special Temporary Authority from the Commission in 1992. Two years later, the Commission's Office of Engineering Technology authorized AirCell to operate as an experimental radio station, providing service on a secondary basis. Pursuant to 47 C.F.R. s 2.104(d)(3)(i) and (ii), stations with secondary status "[s]hall not cause harmful interference to stations of primary services to which frequencies are already assigned or may be assigned at later date," and "[c]annot claim protection from harmful interference" from such primary stations.

The AirCell system consists of specially engineered handsets, ground stations, and so-called "smart" aircraft antennae designed to provide low-power airborne cellular communications without creating harmful interference for other cellular networks. AirCell's ground stations are co-located in rural areas at the cell sites of participating cellular licensees, and customer traffic from the airborne mobile units is interconnected with the public switched network through the switches of AirCell's participating licensees. In addition to hardware and software modifications designed to provide cellular communications at relatively low power levels, the AirCell system seeks to minimize the potential for harmful interference through the use of horizontal polarization, specially shaped antenna patterns, non-standard control channels, and fre-

quency coordination with non-participating cellular providers. The AirCell system was tested by AirCell and petitioners on July 10 and 11, 1997, using four sites in Texas and Oklahoma, and again by petitioners on September 22, 1998, in Florida.

On October 9, 1997, AirCell filed a petition requesting that the Commission waive, among other things, s 22.925 of its rules to permit commercial deployment of AirCell service. Ten months later, AirCell and a number of cellular licensees entering into resale agreements with AirCell filed an amended petition to join the waiver request, thereby establishing that the participating licensees had agreed to modifications of their existing cellular licenses to authorize this secondary use of their licensed spectrum. The Bureau of Wireless Telecommunications ("Bureau") conditionally granted the waiver requests on December 24, 1998. Determining that the AirCell system's potential for interference should be evaluated according to its performance under normal operating conditions, the Bureau found that "the record fully supports the conclusion that because of the lower power, special antennas, and other features unique to the AirCell mobile unit, the risk of harmful interference that use of an ordinary cellular telephone[] in an airborne aircraft poses has been [satisfactorily] addressed." Consequently, in the Bureau's view, the harm that s 22.925 is intended to prevent "will most likely not occur," and special circumstances justified a waiver of the general rule. The Bureau concluded a waiver was also warranted because the public safety benefits to aircraft that will accrue from the use of the AirCell system serve the public interest. Further, the Bureau observed, AirCell's voice and data link promotes competition by providing small aircraft and general aviation consumers an alternative to existing air-ground services.

The Bureau imposed nine special conditions on the waiver, including the requirement that cellular service to airborne terminals be a secondary service, and that participating licensees provide at least thirty days prior notice of service or testing to co-block licensees with transmitter sites within 270 kilometers of their ground stations. The Bureau's conditions further stipulated that participating licensees had a duty to

provide information promptly on request of the Commission regarding any complaint of interference, and an obligation to resolve any instance of harmful interference, which was defined as "serious degradation, obstruction, or repeated interruption of cellular service."

On three occasions, the Bureau conditionally granted waivers for additional licensees. In so doing, the Bureau rejected the opposing carriers' arguments that, among other things, AirCell had taken over obligations of the participating licensees and failed to provide proper advance notice to opposing carriers. On reconsideration the Bureau also clarified several waiver conditions and reduced the notification distance from 270 to 151 kilometers, noting that during the Texas-Oklahoma tests the airborne received signal "was not strong enough to interfere with terrestrial cellular communications, except when the AirCell power control system was deliberately disabled for testing purposes."

The Commission largely affirmed the Bureau's orders granting conditional waivers and reset the two-year term of the waivers to begin on June 9, 2000, the effective date of its order. The Commission "agree[d] with the Bureau's technical assessment of the AirCell system, including its judgment that there is little risk the system will cause harmful interference to non-participating carriers, as well as its evaluation of the system's potential benefit for general aviation." AirCell, 15 F.C.C. Rcd. at 9627. Based primarily on the design characteristics of the AirCell system and the results of the first day of the Texas-Oklahoma field tests on July 10 and 11, 1997, the Commission concluded that AirCell had carried its burden of affirmatively showing that its system is not likely to cause harmful interference to terrestrial cellular operations. The Commission noted that for the July 10, 1997, test,

AirCell chose a "worst case" scenario for site location, i.e., the tests were conducted in a rural area where there was no urban noise to mask the AirCell signal, and in a manner such that the AirCell airborne mobile unit was close to the "victim" site and far from the AirCell partner site. With this configuration, the AirCell mobile has to

emit its highest power level in order to reach its partner site. Even under this configuration, the data from the first day of testing show that there is little likelihood of harmful interference.

Id. at 9630 n.60. The Commission rejected as unpersuasive the evidence presented by the opposing carriers and rejected the opposing carriers' remaining arguments that, for example, the AirCell system violated their exclusive channel block assignments under 47 C.F.R. s 22.905(a), and that their licenses were improperly modified by the AirCell order. By relegating the AirCell system to secondary status in the cellular band and requiring advance notification to help ensure that all primary cellular service is protected from harmful interference throughout the waiver term, the Bureau had, in the Commission's view, provided nonparticipating licensees with "adequate, indeed redundant, interference protection." Id. at 9629. At the same time, the Commission disclaimed any reliance on a probability study submitted by AirCell. The Commission added several other technical operating conditions "to ensure that the AirCell system will in fact operate within the technical parameters on which the Bureau's decision was based." Id. at 9627.

II.

Petitioners raise a variety of objections to the Commission's order. We address in Part A whether the Commission violated its rules and the licensing scheme of the Communications Act by allowing AirCell to provide a new nationwide radio communications service without a license. In Part B, we address whether the waiver grant was arbitrary and capricious. In Part C, we address whether the Commission failed to provide a rational explanation for its conclusion that harmful interference was not likely to result from the AirCell system.

Under our standard of review, the court must uphold the Commission's order unless it is "arbitrary, capricious, an abuse of discretion, or contrary to law." 5 U.S.C. s 706(2)(A). See also *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 851 (D.C. Cir. 1970).

A.

Contending that the Commission "effectively granted the [license] application that AirCell could not file" consistent with Commission rules, petitioners maintain that the Commission also "effectively modified all cellular carriers' licenses nationwide without complying with Section 316 of the Communications Act, 47 U.S.C. s 316." There is no merit to these contentions.

The two relevant rules relate to geographic exclusivity and protection from interference. The first, 47 C.F.R. s 22.905(a), provides: "Each channel block is assigned exclusively to one licensee for use in that licensee's cellular geographic service area ("CGSA") (see s 22.911)." The second, 47 C.F.R. s 22.911(d), provides in relevant part: "Within the CGSA determined in accordance with this section, cellular systems are entitled to protection from co-channel and first-adjacent channel interference and from capture of subscriber traffic by adjacent systems on the same channel block." The Commission's interpretations of its rules regarding the rights of cellular licensees, including the right to channel block exclusivity and freedom from interference or signal capture within a given CGSA, are entitled to substantial deference. See *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504, 512 (1994); *Trinity Broad. of Florida, Inc. v. FCC*, 211 F.3d 618, 625 (D.C. Cir. 2000). The court therefore will accept that these rules proscribe only harmful interference within a given carrier's CGSA, which we address in Part II C, *infra*. Absent harmful interference, AirCell's new system does not trammel upon petitioners' rights as licensees. See *AMSC Subsidiary Corp. v. FCC*, 216 F.3d 1154, 1158-59 (D.C. Cir. 2000). Put otherwise, the waiver does not mean that the licensees participating with AirCell may provide airborne cellular service in a manner that would conflict with the regulatory protections afforded to nonparticipating carriers under their existing licenses. The Commission emphasized the importance of AirCell's secondary status and advance notification to nonparticipating carriers so that they can steer AirCell away from use of particular channels. As the Commission explained, with the grant of the waivers nothing

changed insofar as the protections to which existing licensees are entitled.

There is likewise no merit to petitioners' contention that AirCell was required to be licensed. See 47 U.S.C. ss 301, 304, 307-310 (1991 & Supp. 2001). So long as the licensees in partnership with AirCell maintain actual control over the transmission equipment used in AirCell's system and continue to abide by their own regulatory obligations, the court has no basis for second-guessing the Commission's description of AirCell as a "reseller." Contrary to petitioners' contention, the Commission expressly rejected the claim that an unauthorized transfer of control of the licensees' operations to AirCell had occurred. The Commission stated that "[i]n the case of a nationwide network such as AirCell is attempting to build, ... the AirCell partners, while remaining responsible for complying with Commission requirements ... may reasonably and prudently assign a single entity the task of being a central contact point for system management and system/site termination purposes." Aircell, 15 F.C.C. Rcd. at 9643.

Nor did the Commission contravene its precedent in characterizing AirCell's relationship to its participating carriers as a resale. See Resale and Shared Use, Docket 20097, Report and Order, 60 F.C.C.2d 261, 263 (1976), recon., 62 F.C.C.2d 588 (1977), aff'd sub nom. AT&T v. FCC, 572 F.2d 17 (2d Cir.), cert. denied, 439 U.S. 875 (1978). As the Bureau explained in rejecting the argument that AirCell is a facilities-based service provider seeking co-primary status with non-participating cellular licensees, "AirCell holds no cellular license of its own, but instead purchases capacity to support the AirCell service from participating cellular licensees pursuant to resale agreements." AirCell's partners have agreed to modifications of their licenses to permit this secondary use of their licensed spectrum. An analogous situation existed with regard to the credit card facilitator of railroad cellular service in GTE Airfone, GTE Railfone, and GTE Mobilnet, 8 F.C.C. Rcd. 6171 (Aug. 27, 1993).

For these reasons, the court affirms the Commission's determination that the only legal obstacle to the launch of AirCell's system was the bar in s 22.925.

B.

Petitioners' challenges to the Commission's waiver of s 22.925 as arbitrary and capricious are also meritless.

In *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969), the court explained that the "agency's discretion to proceed in difficult areas through general rules is intimately linked to the existence of a safety valve procedure for consideration of an application for exemption based on special circumstances." *Id.* at 1157. Waiver is thus appropriate when "particular facts would make strict compliance inconsistent with the public interest." *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990). Given the Commission's findings about the unique capability of the AirCell system to provide low power non-degrading cellular service and its contributions to the public interest, petitioners' challenge to the Commission's decision to act by waiver rather than by rulemaking is unpersuasive.

The Commission's concern has been with the serious risk of harmful interference to terrestrial systems from the greatly enhanced transmitting range of ordinary cellular telephones used aboard airborne aircraft. See *Airborne Use of Cellular Telephones*, 7 F.C.C. Rcd. 23 (Dec. 30, 1991). AirCell represented to the Commission that most conventional cellular systems are optimized for vertical wave polarization; as a result, horizontally polarized signals used by the AirCell system are less prone to capture by terrestrial receiving antennas. The Commission noted that "smart" antennae mounted on AirCell-equipped aircraft are designed to transmit specially shaped patterns that reduce the risk of interference. Because the Commission reasonably interpreted s 22.925 as being intended to protect against only harmful interference from airborne cellular telephone use, petitioners' contention that the waiver "eviscerates" the purpose of s 22.925 necessarily fails. Cf. *Busse Broad. Co. v. FCC*, 87 F.3d 1456, 1463-64 (D.C. Cir. 1996). The Commission could reasonably conclude that when combined with the use of non-standard control channels and frequency coordination with nonparticipating licensees, the collective effect of AirCell's

low-power technological design serves to minimize the risk that its operations will degrade the signals of other cellular service providers, thereby addressing the concerns underlying the rule.

In identifying the public interest, see *Keller Communications, Inc. v. FCC*, 130 F.3d 1073, 1076 (D.C. Cir. 1997), the Commission found "few viable alternatives that may provide 'safety-related voice communications between pilots and emergency personnel, and can be used to uplink in-cockpit, up-to-the-minute-weather and air traffic information as well as potentially provide in-flight monitoring of airframe and engine operations, serving to better inform ground personnel of aircraft operations.'" *AirCell*, 15 F.C.C. Rcd. at 9644. The Commission's determination is owed considerable deference. See *Metro. Council of NAACP Branches v. FCC*, 46 F.3d 1154, 1164 (D.C. Cir. 1995); *Health and Med. Policy Research Group v. FCC*, 807 F.2d 1038, 1043 (D.C. Cir. 1987). The record before the Bureau included supportive statements by the National Transportation Safety Board, the Federal Aviation Administration ("FAA"), and the National Association of State Aviation Officials. Although the FAA did not certify the AirCell system as dedicated public safety equipment, the Commission observed that the FAA noted several public benefits that could be derived from the system, and that on balance, in view of the protections for primary cellular service, these benefits justified granting the waiver. The Commission's conclusion that the waiver will offer significant public safety benefits is thus amply supported by the record.

Petitioners' remaining challenges need only brief response. First, contrary to petitioners' contention that the "me-too" waiver process unlawfully delegates authority to private parties by allowing AirCell to arbitrarily exempt any carrier of its choice from the rule with no individualized showing, nothing in the order indicates that the Commission granted AirCell exclusive authority to provide nationwide airborne cellular service. The waiver is limited to two years, and the order does not state that a similar service provider could not also obtain a waiver.

Second, because the opposing carriers did not seek clarification on reconsideration, see 47 U.S.C. s 405, that the waiver did not apply to commercial aircraft, the Commission's decision and order can hardly be faulted for failing specifically to address commercial aircraft.

Third, petitioners cannot now contend that the protection provided by the secondary status of AirCell's operation is "illusory" should interference occur because tracing interference to AirCell operations is "infeasible" and recourse to the complaint process will be ineffective. The opposing carriers' application for review of the Bureau's waiver orders did not challenge the feasibility of initiating an interference complaint, and hence the Commission was not afforded a fair opportunity to pass on the issue. See *Bartholdi Cable Co. v. FCC*, 114 F.3d 274, 279-80 (D.C. Cir. 1997) (citing 47 U.S.C. s 405(a)(2)); see also 47 C.F.R. s 1.115(b). The Commission's decision was adopted on May 24, 2000, and petitioners do not dispute that the ex parte letters on which they rely, dated April 4, 2000, and June 5, 2000, were untimely. The brief reference in petitioners' September 24, 1999, reply (to AirCell's opposition to review of the Bureau's reconsideration order) to problems documenting overflights of brief duration concerned whether the Bureau erred in allowing AirCell operations on DCMA guardband channels, and thus cannot fairly be said to have alerted the Commission to a different issue, namely, the feasibility of enforcing AirCell's status as a secondary service. See, e.g., *Alianza Federal de Mercedes v. FCC*, 539 F.2d 732, 739 (D.C. Cir. 1976).

C.

Although petitioners raise a host of claims in contending that the Commission had no basis for its determination that it was not likely that AirCell's operations would cause harmful interference to terrestrial cellular systems, the court's concern is confined to one aspect of the Commission's explanation.

The parties agree that for terrestrial cellular service to remain effective, the signal from a terrestrial cell phone must

sufficiently exceed the electromagnetic noise floor of the location where the call is received, plus whatever interference may be generated by a concurrent AirCell signal (i.e., the so-called "signal-to-noise-plus-interference ratio"). AirCell claims, and petitioners do not appear to dispute, that the industry standard for this ratio is 17dB. Conversely, and as a corollary principle, interference from an AirCell signal that falls within the existing noise floor should not be detectable to a terrestrial cell phone user, much less degrade a terrestrial signal utilizing the same frequency within the same CGSA. Apart from this baseline understanding, however, the evidence before the Commission on the levels of harmful interference that AirCell's system could cause was in conflict.

On the one hand, AirCell submitted reports indicating that there was virtually no chance that its service would cause harmful interference to terrestrial cellular operations. A report prepared by AirCell consultants, TEC Cellular, Inc. ("TECC"), found that virtually all interference from AirCell signals in urban, suburban, and rural areas fell within the existing noise floors of those environments during normal operations. Relying largely on measured signal strength data from the July 10, 1997, test runs, which were designed to simulate "normal" operating conditions (i.e., with all AirCell components operational and airplanes flying point-to-point paths), the TECC report concluded that "[f]ull scale AirCell operation, properly deployed and engineered, will cause a level of interference to terrestrial calls so low that while it may be detectable with sensitive test equipment, it should be imperceptible to terrestrial callers." In addition, AirCell submitted a report incorporating the results of a probability study, based also on the July 10, 1997, test data, which concluded that there was only a five-in-a-million chance that an AirCell call could noticeably degrade a terrestrial call.

On the other hand, the opposing carriers submitted contrary analyses of the test data. For example, an engineering report submitted by Dr. William C. Y. Lee, Vice President and Chief Scientist, and Mark Schulz, Technology Director of the Strategic Technology Group of AirTouch Communica-

tions, Inc., concluded, based on the July 10 and 11, 1997, test data, that harmful interference was likely to occur 30% of the time. They based this conclusion on the assumption that the test runs employed on both days are equally probable to occur during actual operations, and that a minus 124 dBm interference threshold should be employed in calculating the likelihood of harmful interference, rather than the minus 117 dBm threshold used for acceptable voice quality in the interference assessment submitted by AirCell, or the minus 110 dBm threshold used in the TECC report as a reasonable lower limit on an acceptable ground call. In addition, Dr. Lee and Mr. Schulz claimed that there was no test data below the 5000' altitude level, notwithstanding a "disturbing trend" showing higher interference levels at progressively lower altitudes, and that there was no mechanism in the AirCell system to terminate and block calls below 5000'.

The Commission adequately explained why it rejected the July 11, 1997, Texas-Oklahoma test data and the September 22, 1998, Florida test data upon which petitioners rely. The July 11, 1997, test runs were conducted without the dynamic power control element, which eliminated the benefits of one of the main components of the AirCell design. In addition, the flight patterns employed on that date were abnormal, such that the Commission concluded that they simulated conditions approximating a "major malfunction." AirCell, 15 F.C.C. Rcd. at 1630. For similar reasons, the Commission discarded the Florida test results, which also involved abnormal flight patterns around a "victim" cell site at close range and low altitude. The Commission further noted that the opposing carriers had installed the wrong type of antenna during the Florida test, did not record the AirCell mobile transmitter power output, and deliberately matched the supervisory audio tone to prevent the AirCell telephone from hanging up once it had lost a usable signal from the AirCell ground station. In addition, given its view that the results of the second day of the Texas-Oklahoma tests and the Florida tests were unreliable, the Commission sufficiently justified its rejection of the opinions of the chief operating officers of six major cellular carriers for lack of credible supporting evidence. Finally, the

Commission reasonably explained that concern about interference from uptilted antennas was adequately addressed by the ordinary coordinating process that every cellular licensee must conduct under Commission rules.

However, in rejecting the report of Dr. Lee and Mr. Schulz, the Commission provided no such clarity as to its choice of the appropriate interference threshold. Rather, the Commission simply stated that they had relied on "unrealistic assumptions, including the use of an unrealistically low interference threshold." *Id.* at 9631. In the Commission's view, use of a threshold of minus 124dBm was "too conservative and ... an interference threshold of minus 117 dBm is more realistic for typical analog systems." *Id.* at 9631 n.67. This may be so, and the court would otherwise defer to the Commission's expertise. See *Keller Communications*, 130 F.3d at 1078. But the Commission's succinct statement fails to provide a reasoned justification for rejecting the minus 124 dBm threshold, much less a defense of the minus 117 dBm threshold that the Commission viewed as being "more realistic." Nor does the Commission indicate that it was relying on any rules or standards regarding such determinations. The omission of an explanation of its choice of an interference threshold is particularly troubling because the July 10, 1997, test data, which was the only test data on which the Commission apparently relied, did not represent the full range of operational conditions in which AirCell's phones are likely to be used.

The only other clarification that the Commission provided was a conclusory assessment, again without further explanation, that "[b]ased on our review of the evidence, it appears to us that use of the latter [minus 117 dBm] threshold would have led to a finding that AirCell would cause a significant level of harmful interference 0% of the time." *Id.* Obviously, this does not fill the void. Nor, of course, can the fact that AirCell used the minus 117 dBm threshold in its own report suffice to explain the Commission's choice. That petitioners may not dispute the results of applying different dBm thresholds to the test data likewise does not fill in the gap, as the Commission appears to suggest in its brief. The Commis-

sion's failure to justify adequately its choice of an interference threshold thus implicates its additional failure to explain how it was able, in the absence of a probability study, to translate the raw signal data from the July 10, 1997, field test into a finding that AirCell's system "would cause a significant level of harmful interference 0% of the time" in the real world.

Conclusory explanations for matters involving a central factual dispute where there is considerable evidence in conflict do not suffice to meet the deferential standards of our review. Basic principles of administrative law require the agency to " 'examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.' " U.S. Telecom Ass'n v. FCC, 227 F.3d 450, 461 (D.C. Cir. 2000) (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). The Commission may well be able, based on the record that was before it, to resolve satisfactorily the issue of harmful interference in AirCell's favor. Indeed, the explanation for its conclusion in AirCell's favor may be relatively simple and briefly stated. Because there is too much evidence in the record suggesting a contrary conclusion, however, the court is unable to discern why the Commission considered one interference threshold preferable to another or how it could extrapolate from the July 10, 1997, test data in the absence of a probability study. Accordingly, we grant the petitions in part.