the most adverse center of gravity, and
with the propeller in the most adverse
pitch position, may not be less than the
following:

(a) **Ground clearance.** There must be a
clearance of at least seven inches (for
each airplane with nose wheel landing
gear) or nine inches (for each airplane
with tail wheel landing gear) between
each propeller and the ground with the
landing gear statically deflected and in
the level takeoff, or taxiing attitude,
whichever is most critical. In addition,
there must be positive clearance be-
tween the propeller and the ground
when in the level takeoff attitude with
the critical tire(s) completely deflated
and the corresponding landing gear
strut bottomed.

(b) **Water clearance.** There must be a
clearance of at least 18 inches between
each propeller and the water, unless
compliance with §25.239(a) can be
shown with a lesser clearance.

(c) **Structural clearance.** There must
be—
(1) At least one inch radial clearance
between the blade tips and the airplane
structure, plus any additional radial
clearance necessary to prevent harmful
vibration;
(2) At least one-half inch longitudinal
clearance between the propeller blades
or cuffs and stationary parts of the air-
plane; and
(3) Positive clearance between other
rotating parts of the propeller or spin-
ner and stationary parts of the air-
plane.

§ 25.929 Propeller deicing.
(a) For airplanes intended for use
where icing may be expected, there
must be a means to prevent or remove
hazardous ice accumulation on propel-
ers or on accessories where ice accu-
mulation would jeopardize engine per-
formance.

(b) If combustible fluid is used for
propeller deicing, §§25.1181 through
25.1185 and 25.1189 apply.

§ 25.933 Reversing systems.
(a) For turbojet reversing systems—
(1) Each system intended for ground
operation only must be designed so
that during any reversal in flight the
engine will produce no more than flight
idle thrust. In addition, it must be
shown by analysis or test, or both,
that—
(i) Each operable reverser can be re-
stored to the forward thrust position;
and
(ii) The airplane is capable of contin-
ued safe flight and landing under any
possible position of the thrust reverser.

(2) Each system intended for inflight
use must be designed so that no unsafe
condition will result during normal op-
eration of the system, or from any fail-
ure (or reasonably likely combination
of failures) of the reversing system,
under any anticipated condition of op-
eration of the airplane including
ground operation. Failure of structural
elements need not be considered if the
probability of this kind of failure is ex-
tremely remote.

(3) Each system must have means to
prevent the engine from producing
more than idle thrust when the revers-
ing system malfunctions, except that it
may produce any greater forward
thrust that is shown to allow direc-
tional control to be maintained, with
aerodynamic means alone, under the
most critical reversing condition ex-
pected in operation.

(b) For propeller reversing systems—
(1) Each system intended for ground
operation only must be designed so
that no single failure (or reasonably
likely combination of failures) or mal-
function of the system will result in
unwanted reverse thrust under any ex-
pected operating condition. Failure of
structural elements need not be consid-
ered if this kind of failure is extremely
remote.

(2) Compliance with this section may
be shown by failure analysis or testing,
or both, for propeller systems that
allow propeller blades to move from
the flight low-pitch position to a posi-
tion that is substantially less than
that at the normal flight low-pitch po-
sition. The analysis may include or be
supported by the analysis made to
show compliance with the require-
ments of §35.21 of this chapter for the
propeller and associated installation
components.

[Amend. 25–72, 55 FR 29784, July 20, 1990]