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Federal Aviation Agency

**ADVISORY
CIRCULAR**

AC NO: AC 90-1

AIR TRAFFIC CONTROL
AND GENERAL OPERATIONS

EFFECTIVE :

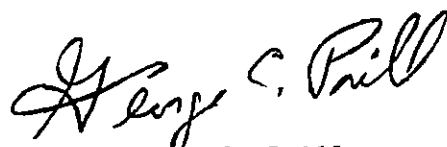
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EOB 10-A

SUBJECT : USING THE INSTRUMENT APPROACH PROCEDURE CHARTS

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1. PURPOSE. To clarify the symbols and abbreviations used on Instrument Approach Procedure Charts.
 2. GENERAL. Questions frequently arise which indicate that many pilots are not completely aware of the information contained on Instrument Approach Procedure Charts.
 3. OBJECTIVE.
 - a. This circular is designed to assist in resolving questions frequently asked about Instrument Approach Procedure Charts. In addition, it is intended to present this information to those pilots who may be unfamiliar with these very important tools.
 - b. These approach procedures and weather minima are established only after careful analysis by the Federal Aviation Agency. Criteria as to obstruction clearance, terrain features, and other technical considerations are applied. Many flight tests are conducted using a procedure before it is finally forwarded by the FAA for printing and distribution by the Coast and Geodetic Survey. Separate charts are provided for each approved approach on the various navigational and approach facilities at a given airport. In addition to the VOR procedure for Stapleton Airfield illustrated in Figure 1, others are prescribed for using the low frequency radio range, automatic direction finder (ADF), and instrument landing system (ILS).
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- c. Use of the procedures specified is mandatory on the part of all pilots approaching for landing under Instrument Flight Rules. All prudent pilots pay particular attention to the take-off and landing minima. They have been established as a result of experience gained by thousands of skilled pilots while they accumulated many years of flying experience.



George C. Prill
Director
Flight Standards Service

Attachment

To simplify this introduction, a typical Instrument Approach Procedure Chart (Figure 1) is presented. This same chart is then shown in its several segments. At first glance it may appear cluttered and complicated. Broken down into its various essential elements, however, the chart will become less mysterious and present its information in a more simple manner than many other charts used routinely by pilots. Let's take portions of the chart and compare them individually with similar excerpts from an explanation sheet in the Instrument Approach Procedure Chart booklet. The top blocks (Figure 2) contain information relative to communications frequencies, navigational aids, and radar availability.

INST APCH PRO (FAA)		U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY		STAPLETON AIRFIELD DENVER, COLO.	
DENVER APPROACH CONTROL		DENVER RADIO		STAPLETON TOWER	
North 119.5 269.3 South 120.5 269.3		379 DN 122.2 126.7		335 118.3 126.2	
335 116.3 126.2		135.9 255.4 272.7		137.88 257.8 284.0	
137.88 257.8 271.3				GROUND CONTROL 121.9	
				RADAR AVAILABLE	

Consult Flight Information Publications for latest information

FIGURE 2. COMMUNICATIONS FREQUENCIES,
NAVIGATIONAL AIDS, AND
RADAR AVAILABILITY

The same part of the explanation sheet (Figure 3) explains this quite simply.

INST APCH PRO (FAA)	U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY		AIRPORT NAME CITY, STATE OR COUNTRY
Approach Control information	Primary facility information. Voice call will be indicated by word RADIO	Local Control information	Radar availability

Agency originating the procedure

Consult Radio Facility Charts for latest information

FIGURE 3. EXPLANATION OF CHART BLOCKS

Since changes to the information in this section are sometimes necessary before a new Instrument Approach Procedure Chart can be placed in the hands of pilots, you are cautioned to consult more frequently published information sources such as En Route Radio Charts and Airman's Guide for latest frequencies, etc.

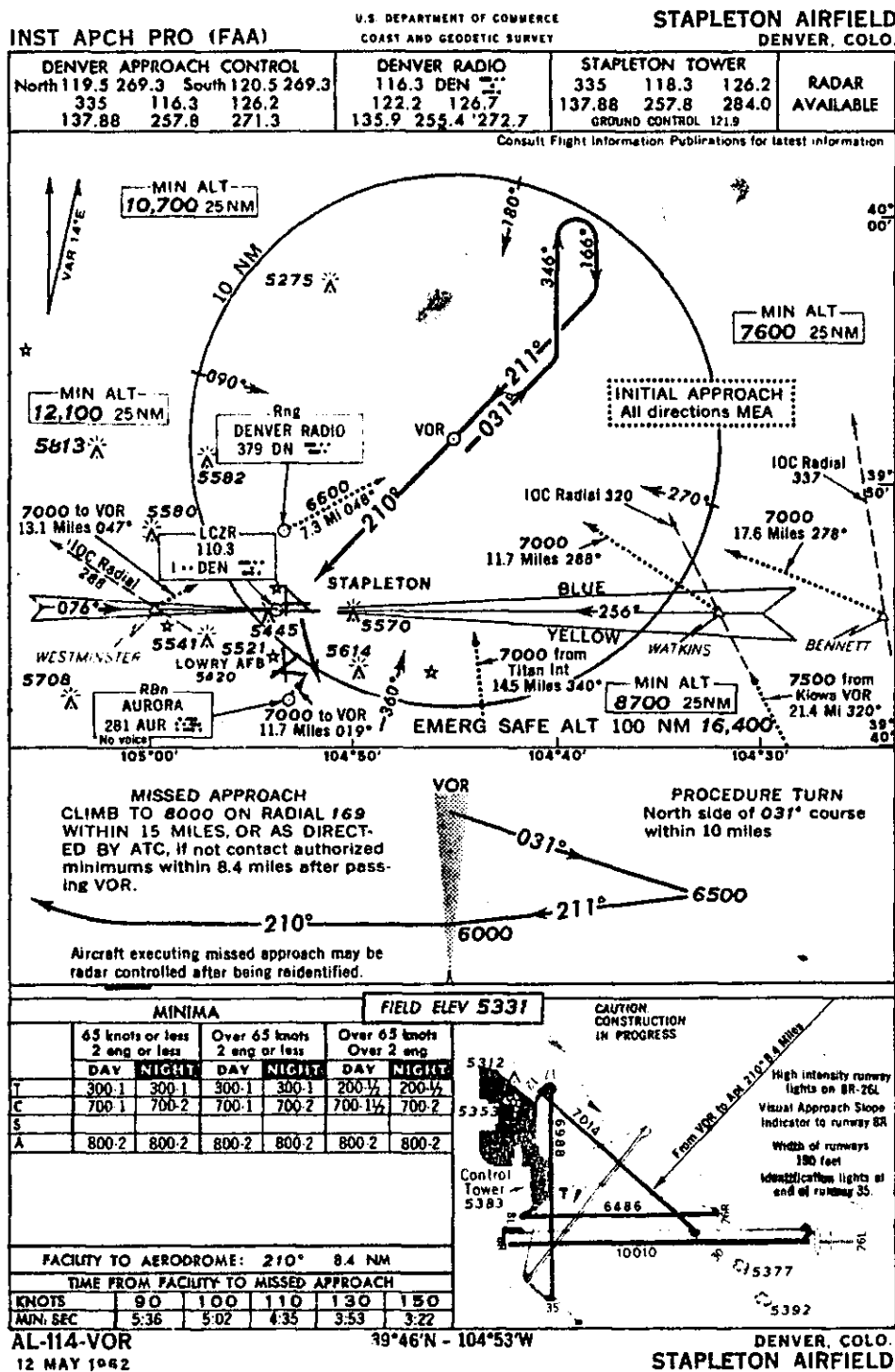


FIGURE 1. INSTRUMENT APPROACH PROCEDURE CHART

FIGURE 4. PLAN VIEW OF APPROACH

Again the equivalent section from the explanation sheet (Figure 5) with its information contained in boxes on a blank approach plate gives us further definition of the chart's meaning, particularly when reference is made to the legend sheet from the chart booklet (Figure 6) which defines symbols used.

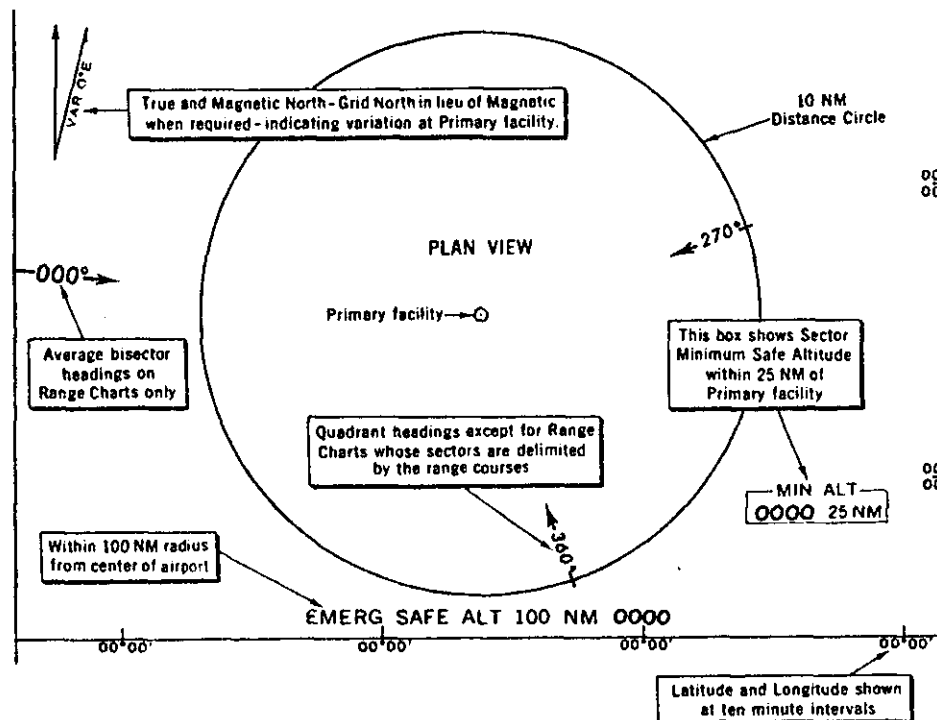
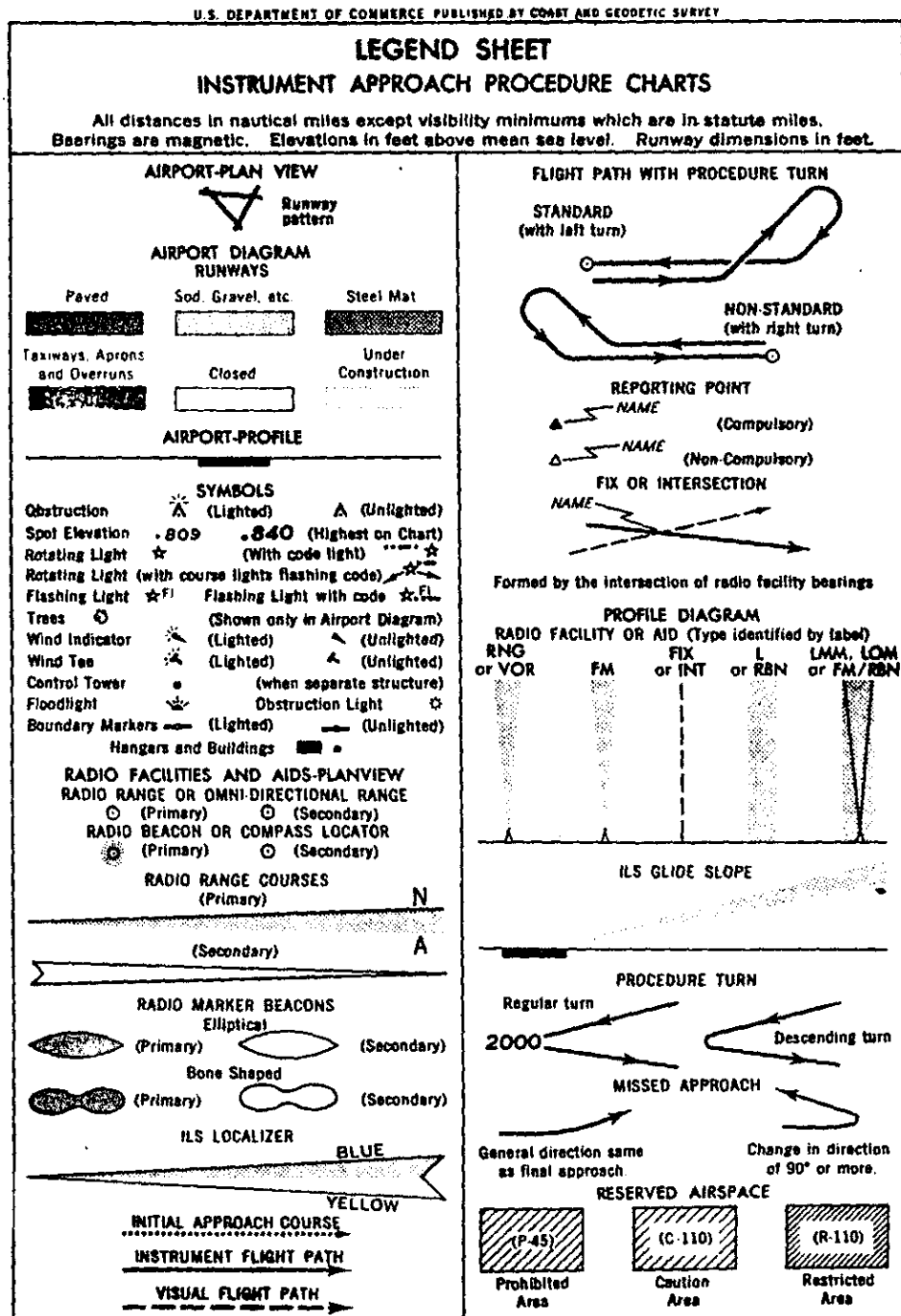


FIGURE 5. EXPLANATION OF PLAN VIEW



12 DEC. 1957

LEGEND SHEET

FIGURE 6. LEGEND SHEET
INSTRUMENT APPROACH
PROCEDURE CHARTS

Now we hope things are shaping up pretty well--even for you who haven't had an opportunity to inspect an approach plate before.

Directly under the plan view we have just examined is a profile or side view of the approach (Figure 7). We find this readily interpreted by referring to our symbol explanations on the legend sheet. Note that all altitudes prescribed here and anywhere else on the chart are above mean sea level (MSL). Again from our Denver plate:

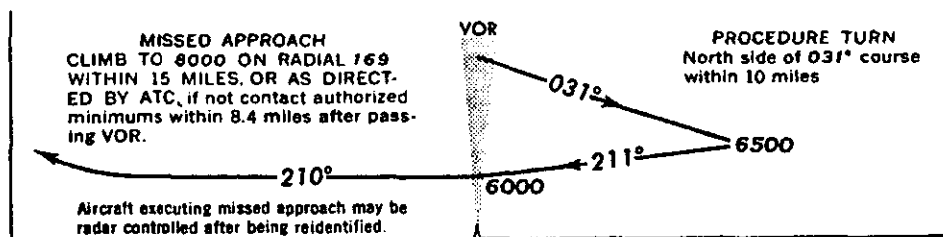


FIGURE 7. SIDE VIEW OF THE APPROACH

The bottom section of the plate (Figure 8) contains the information which probably most frequently results in misunderstanding.

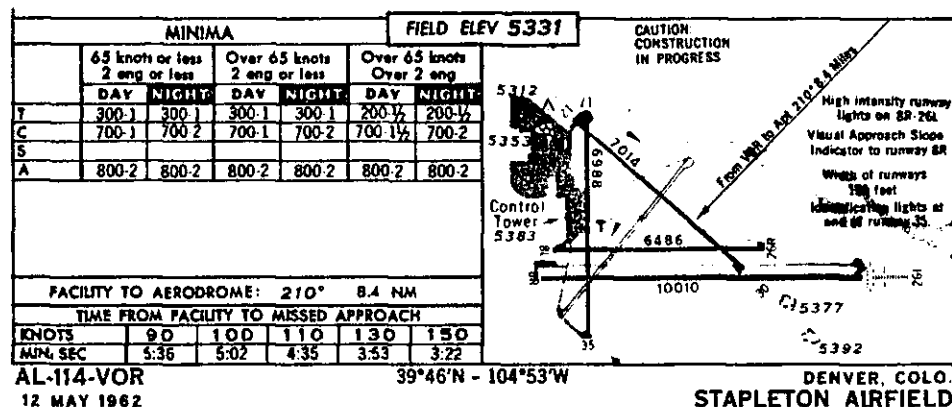


FIGURE 8. AERODROME DATA AND ESTABLISHED MINIMA

Compare this with the same part of our legend sheet (Figure 9).

T - Take-off
C - Circling
S - Straight-in
A - Alternate

Ceiling shown in feet above airport
Visibility shown in statute miles

Elevation of highest point
on usable landing area

	MINIMA						FIELD ELEV 000
	65 knots or less 2 eng or less		Over 65 knots 2 eng or less		Over 65 knots Over 2 eng		
	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	
T							AERODROME SKETCH
C							
S							
A							

This space shows notes:
CAUTION, AIR CARRIER, etc.
as required by procedure.

On ILS Charts, this is shown
as RATE OF DESCENT ON
GLIDE SLOPE

Bearing and distance
shown here

FACILITY TO AERODROME: 000° 0.0 NM

TIME FROM FACILITY TO MISSED APPROACH 0.0 NM

KNOTS	90	100	110	130	150
MIN:SEC					

Distance shown here if
different from facility to
aerodrome distance

Rate of descent in feet per
minute shown on ILS Charts

AL-000-VOR ← Type of procedure
19 JAN. 1960 ← Date of chart

00°00'N - 00°00'W
← Airport coordinates

CITY, STATE OR COUNTRY
AIRPORT NAME

**FIGURE 9. EXPLANATION OF AERODROME DATA
AND ESTABLISHED MINIMA**

The portion on minima is sometimes misinterpreted, but a look at the abbreviation explanation in Figure 10 should clarify most questions it raises.

"T" is the minimum ceiling in hundreds of feet and visibility in statute miles established for takeoff at the airport. "C", "S", and "A" indicate minimum weather conditions necessary for landing from circling and straight-in approaches and when using the airport as the alternate required for IFR flights under certain weather conditions.

The three column headings under "Minima" indicate the aircraft stalling speeds which are pertinent and the number of engines on the airplane. Thus the pilot of a slower, less complicated airplane often is allowed lower weather minima for landing than one flying a large multiengine airplane.

U.S. DEPARTMENT OF COMMERCE PUBLISHED BY COAST AND GEODETIC SURVEY

LEGEND SHEET

APPROACH LIGHTING SYSTEMS

**CENTERLINE
(HIGH INTENSITY)**

**LEFT SINGLE ROW
(HIGH INTENSITY)**

NEON LADDER

SLOPELINE

TWO PARALLEL ROW

FUNNEL

U.S. STANDARD (A)

U.S. STANDARD (B)

U.S. STANDARD (C)

AF OVERRUN LIGHTING

ABBREVIATIONS

A..... Alternate	INT..... Intersection
ADF..... Automatic Direction Finder	L..... Compass Locator
ALT..... Altitude	MEA..... Minimum En route Altitude
APT..... Airport	MIN..... Minimum or Minute
ATC..... Air Traffic Control	MM..... Middle Marker
ATCS..... Air Traffic Communications Station	NM..... Nautical Miles
C..... Circling	OM..... Outer Marker
DME..... Distance Measuring Equipment	RBN..... Radiobeacon
ELEV..... Elevation	RNG..... Radio Range
EMERG..... Emergency	RWY..... Runway
ENG..... Engine	S..... Straight-in
FM..... Fan Marker	SEC..... Second
GS..... Glide Slope	T..... Take-off
ILS..... Instrument Landing System	VOR..... Very High Frequency Omnitrange

12 DEC. 1957

LEGEND SHEET

12 DEC. 1957

LEGEND SHEET

NOTE: ATCS is now FSS (Flight Service Station).

FIGURE 10. LEGEND SHEET.
APPROACH LIGHTING SYSTEMS
AND ABBREVIATIONS LISTING